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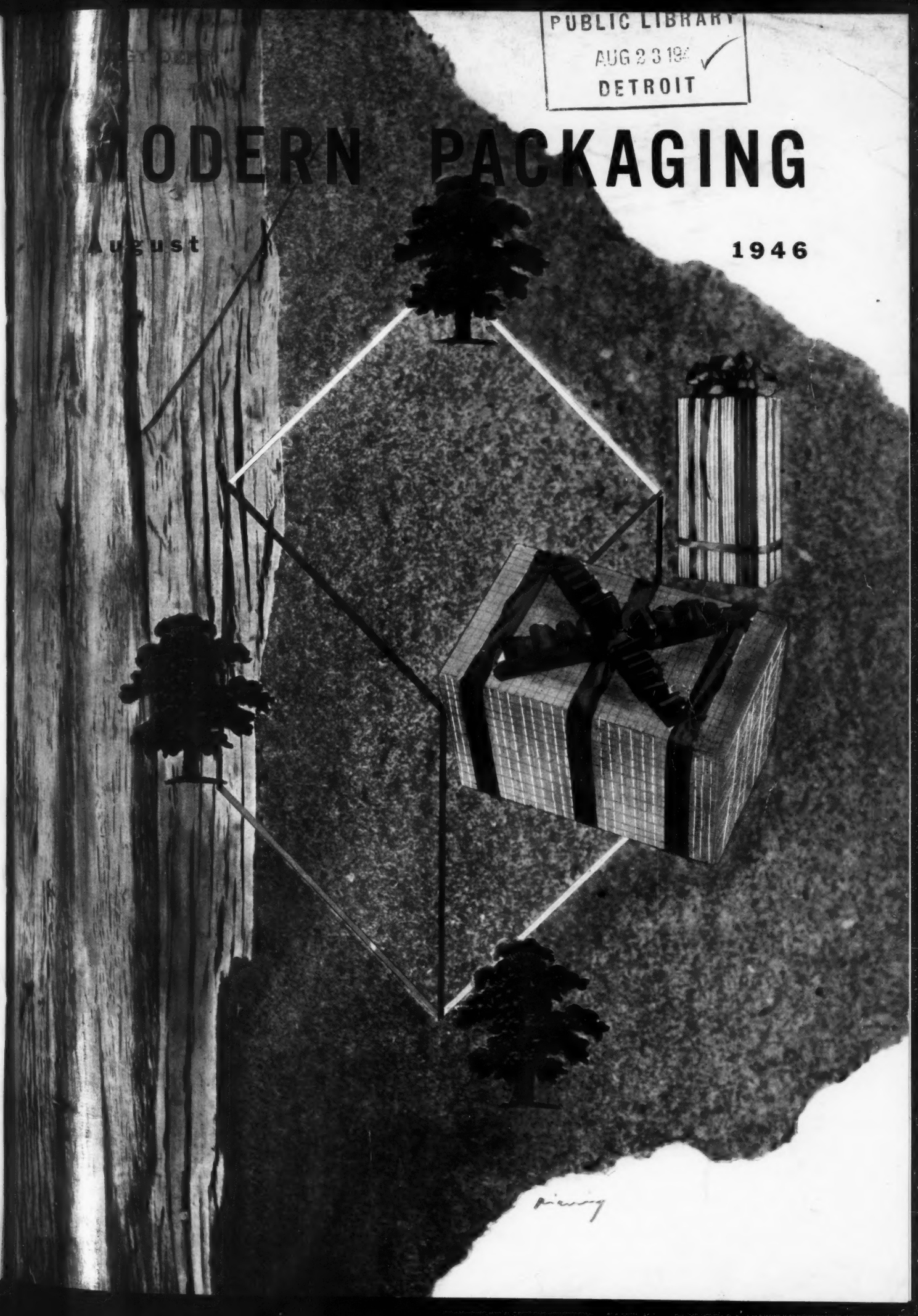
MODERN PACKAGING

August 1946



"" is the answer a "Resyn" adhesive

Each "RESYN" Adhesive is a complex blend that is designed to do a specific job exceedingly well. Many amazing developments have resulted from applying them to packaging, converting and assembling operations previously thought to be at their highest level of efficiency.

Why? Because "RESYN" adhesives provide higher resistance against all forms of moisture and temperature variations. They're vermin-proof, mould-proof, age-proof. They're economical. They increase production speeds, reduce supervision, offer greater versatility, spread and penetrate uniformly, and bring increased sales advantages to many products.

What are some uses? *In bag making:* for difficult stocks . . . breather action . . . moisture vapor barrier. *In luggage making:* for softness and pliability . . . resistance to fungus . . . laminating before shaping under heat and pressure. *In chemical packaging:* for all-purpose, all-weather labeling and overcoating on wood, fiber, painted steel, tin and glass. *In upholstering:* for adhering cloth to cloth, chipboard, wood, metal, wadding, etc.

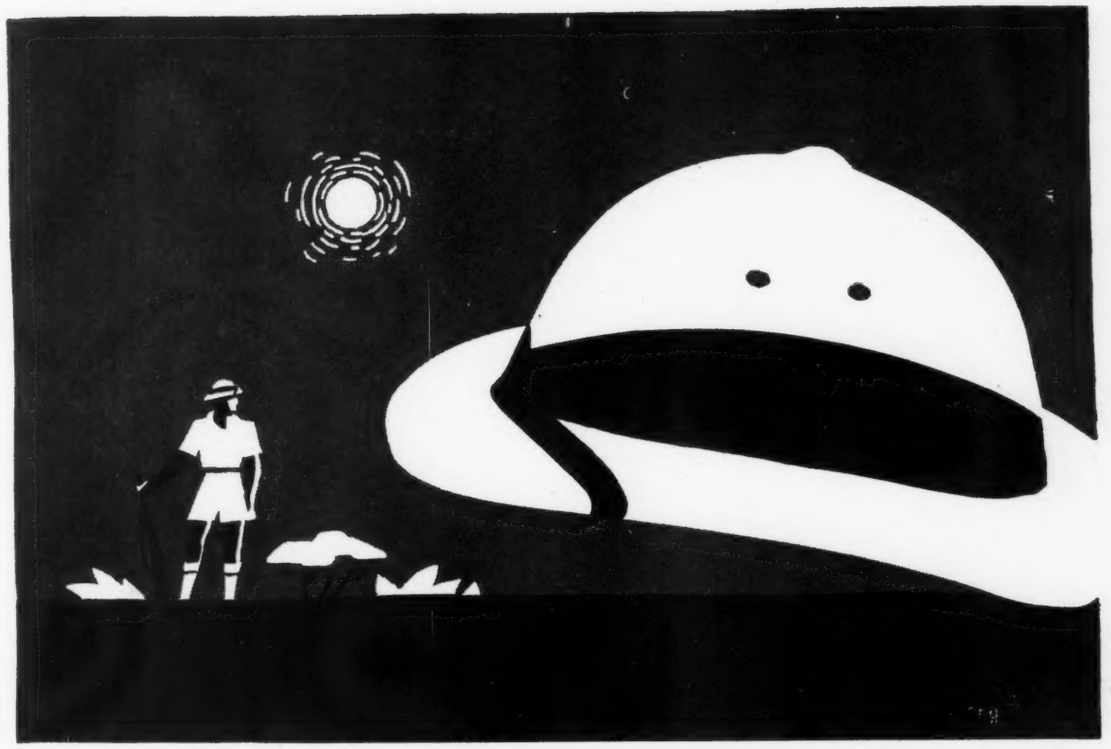
A whole new world of uses is opening up for "RESYN" adhesives. They're readily available. So get acquainted with their types, properties, uses. All are quickly summed up by National Adhesive in an interesting booklet: When and How to Use "RESYN" Adhesives. Write for your copy — NOW!

Dunellen Plant

Offices: 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 735 Battery Street, San Francisco 11, and in other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto. In England: National Adhesives, Ltd., Slough.

National ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE



PROTECTIVE

THE PROTECTIVE CAP is a safeguard for product, packer, and consumer. It seals the package effectively; guards against leakage from within, and impurities from without. It protects the packer against loss of hard-won patronage, his precious good name, and priceless good will. It protects the consumer by delivering the goods as packaged, properties unchanged, measure undiminished. The Phoenix C T is a protective cap—from first application until final removal. It neither adds to nor takes from the quality of a product. But the Phoenix C T Cap does provide top protection for product goodness, efficacy, and volume. It can do no more. It will do no less.

Top wear for glassware

PHOENIX METAL CAP CO., CHICAGO 8 AND BROOKLYN 18

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MODERN PACKAGING

VOLUME 19 AUGUST 1946 NUMBER 12

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COVER—Of all materials used in packaging, paper is among those at the top of the list both in quantity and variety of applications. This month's cover by Peter Piening symbolizes the derivation of decorative paper wrappings from wood pulp.

a good product

plus a *MILPRINT* package designed to protect its goodness and merchandise its Brand name to the consumer

equals increased sales and increased public acceptance of your product

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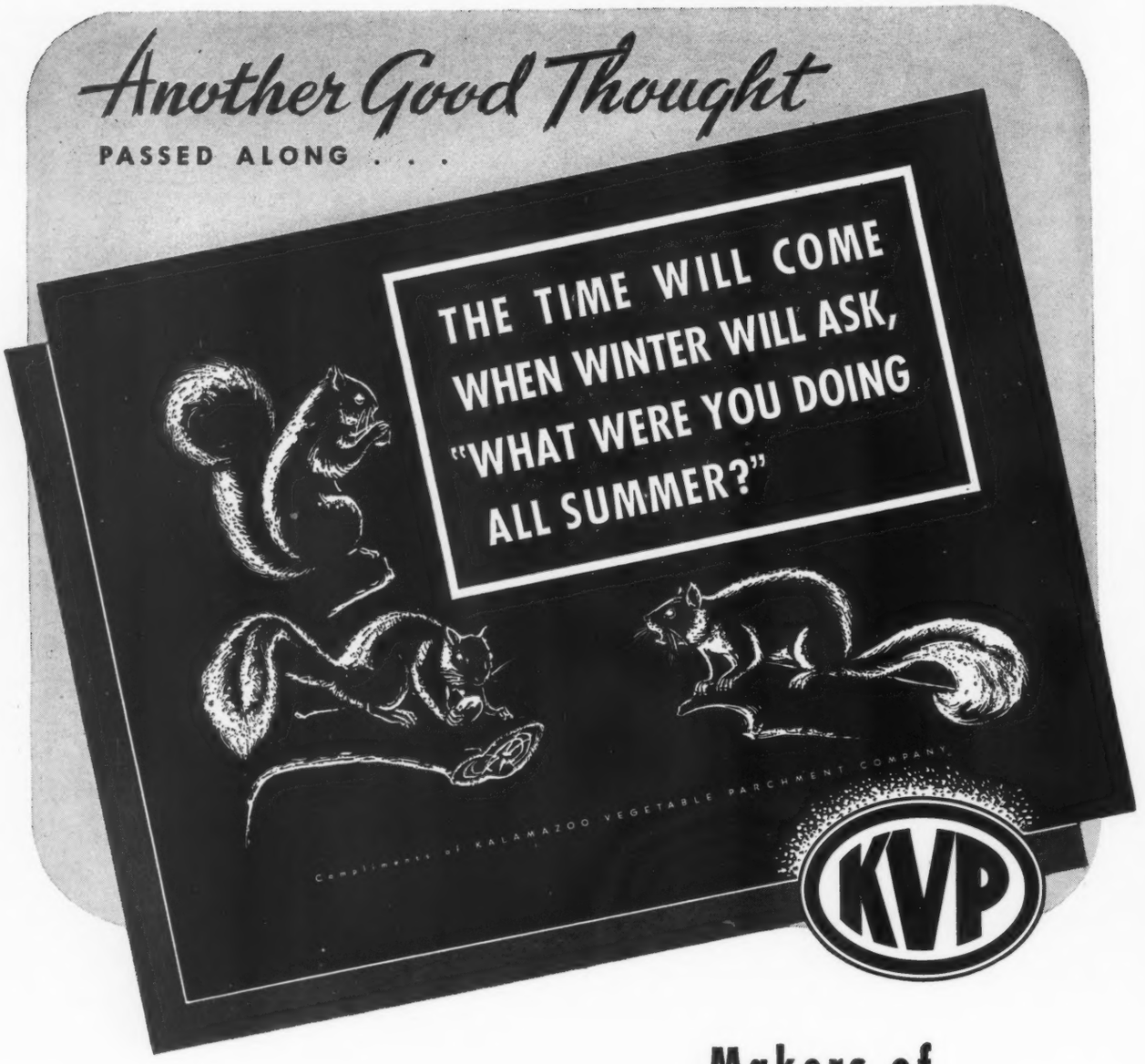

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PARCHMENT COMPANY

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PARCHMENT . KALAMAZOO 99 . MICH.

BRANCH PLANTS IN HOUSTON, TEXAS
AND PHILADELPHIA, PENNSYLVANIA

Saddle and gear by All Western Plastics Co., Alliance, Neb.

COWBOY'S DELIGHT

Working saddle and gear another interesting application for GEON raw materials

THAT saddle isn't a show piece—although it very well could be. It's a working saddle—and all the gear is working gear. All are made from GEON polyvinyl materials for the same reasons that GEON is the ideal raw material for such things as shower curtains and acid tank linings, baby pants and wire insulation, handbags and upholstery.

Products made from GEON can be resistant to water, chemicals, foods, aging, wear, oils, sunlight, heat, cold, mildew, and most other normally destructive factors. They may be flexible or rigid, clear or opaque, brilliantly or delicately colored in the entire color range. GEON can be extruded, pressure or injection molded, calendered or cast into sheet or film. In solution or latex forms GEON can be used to coat fabrics and fibres of all kinds as well as paper and board.

Thanks to GEON's versatility there are applications in literally *every* industry. While we make no finished products of GEON we'll be glad to work with you on any special applications. Just write Department L-8, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

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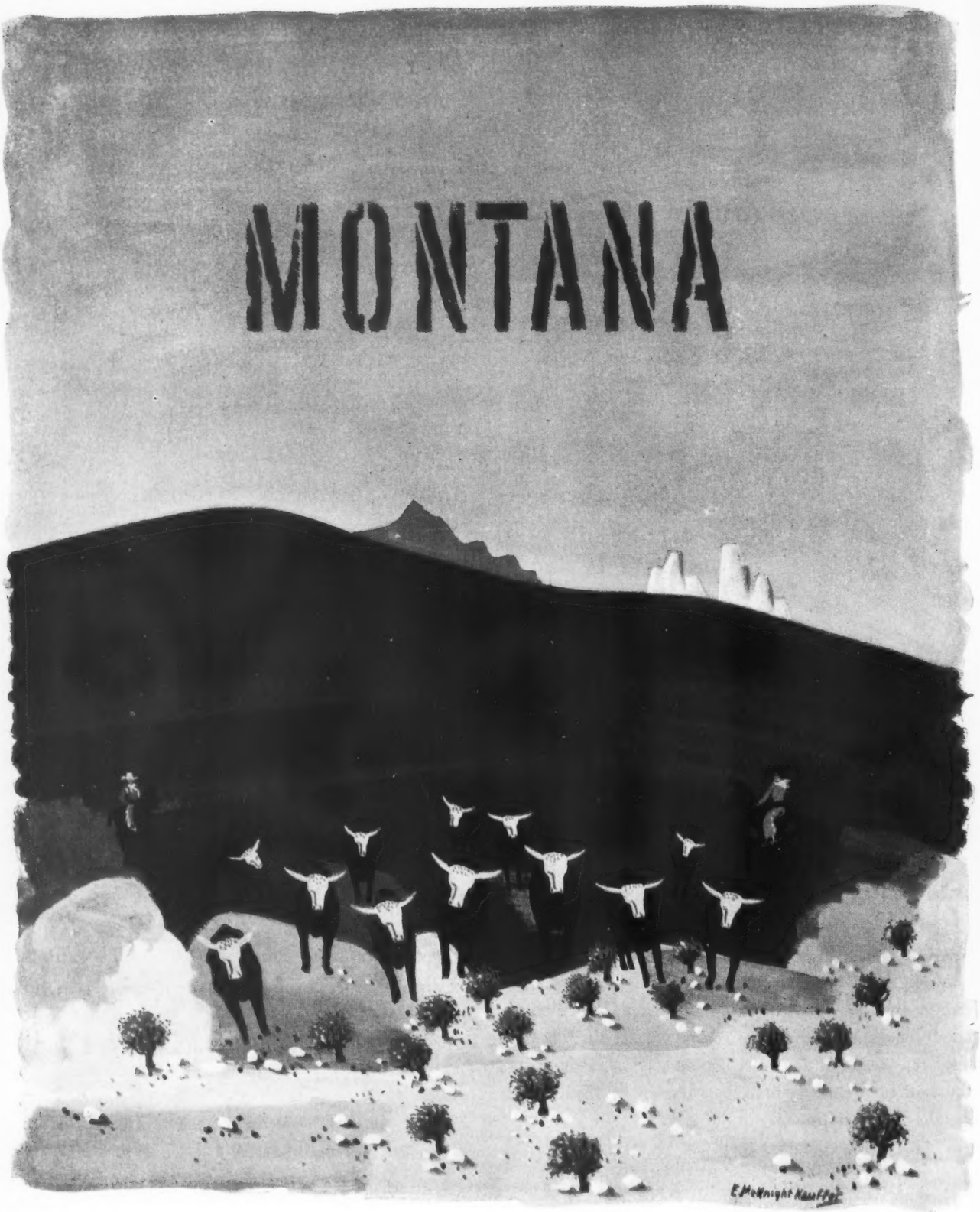


Artist: E. McKnight Kauffer, native of Montana

Annual purchases: $300 million—mostly packaged. This is only one of 48 rich state markets for properly packaged products. Consult with us on your present package, for maximum customer appeal, protection and economy.

CONTAINER CORPORATION OF AMERICA

CHICAGO AND 23 OTHER CITIES

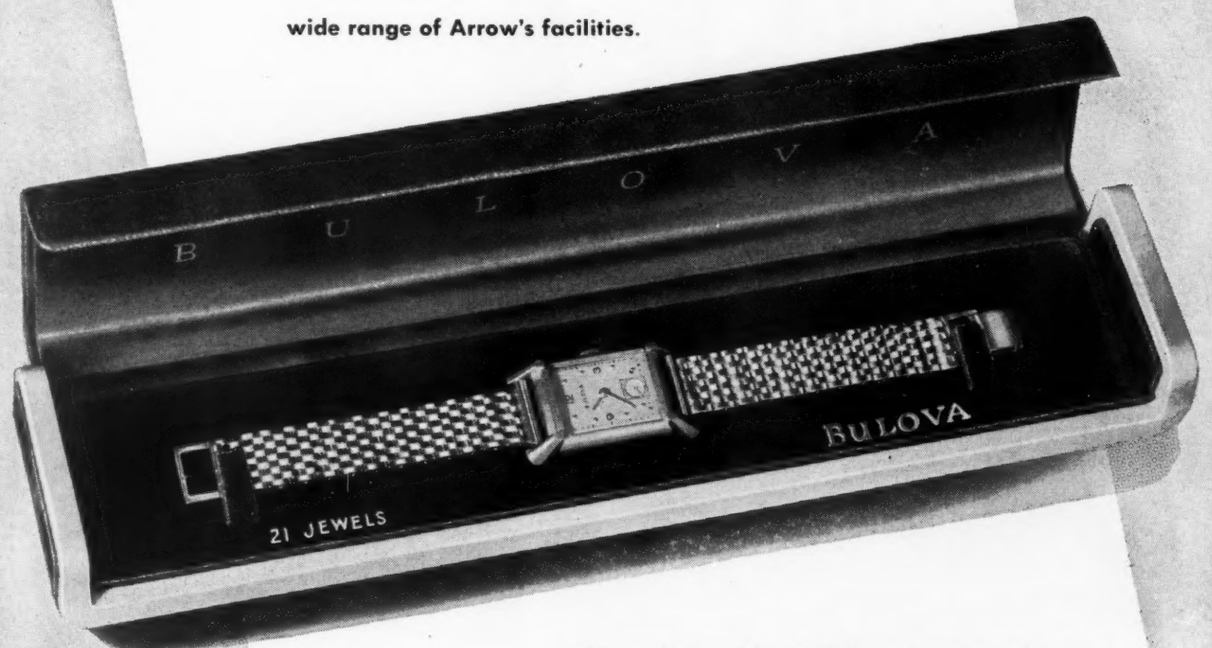
SAVE WASTE PAPER

another *Arrow* box achievement

An outstanding box for an outstanding watch presentation.

Arrow is proud to have been entrusted with the production of this unusually styled box that so artistically combines velvet covered plastic and metal construction.

This type of dual construction is one more example of the wide range of Arrow's facilities.



The acclaim with which jewelers throughout the country have received this Bulova "Excellency" box is evidence of Arrow leadership.

Arrow **BOXES AND DISPLAYS**

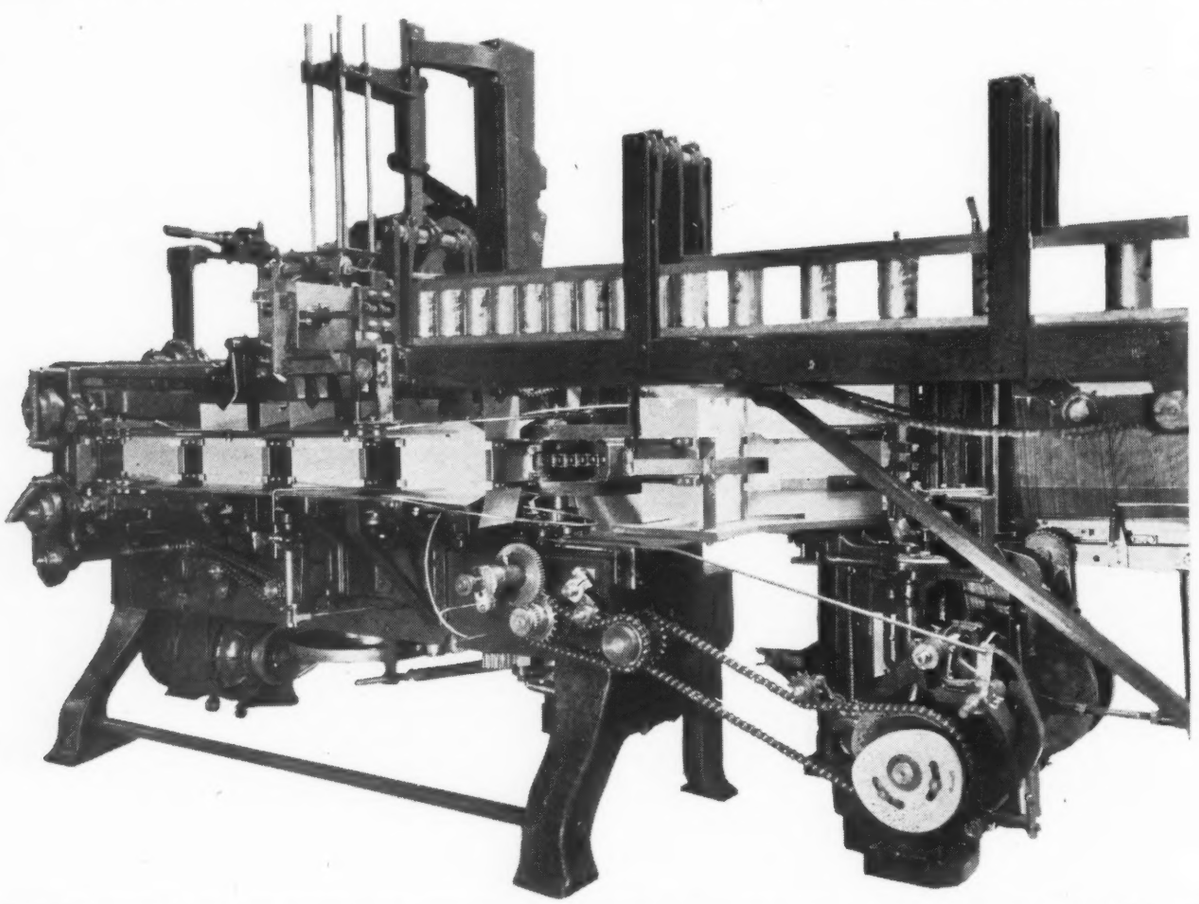
ARROW MANUFACTURING COMPANY, INC., FIFTEENTH AND HUDSON STREETS, HOBOKEN, NEW JERSEY

PACKAGING is an *Art* ...

And art implies skill. That's why Standard-Knapp is proud of its skilful machines—designed to perform a highly specialized job in the very specialized art of automatic packaging.

Take the machine illustrated here. It opens, packs, seals and delivers in one continuous operation. Into one feeding station go cans, glass jars or bottles—into another go flat cartons. As the packages move into the leading station, the machine opens the cartons and sets them up. As soon as the cartons are filled, the machine automatically seals them and carries them away to any given place in the plant.

This is a beautiful sample of Standard-Knapp's functional machinery—created to do a special job. It goes without saying that this Standard-Knapp machine as well as every piece of Standard-Knapp equipment is of sound design and quality construction—built for long life, performance. That's what makes for low unit cost in packaging production.



STANDARD-KNAPP CORP.

MANUFACTURERS OF CASE SEALING, CASE PACKAGING AND CAN LABELING MACHINES

FACTORY and GENERAL OFFICES—PORTLAND, CONNECTICUT

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Oysters? But there's no "R" in August

LIQUID-TIGHT, FLAVOR-RIGHT IN CELLOPHANE

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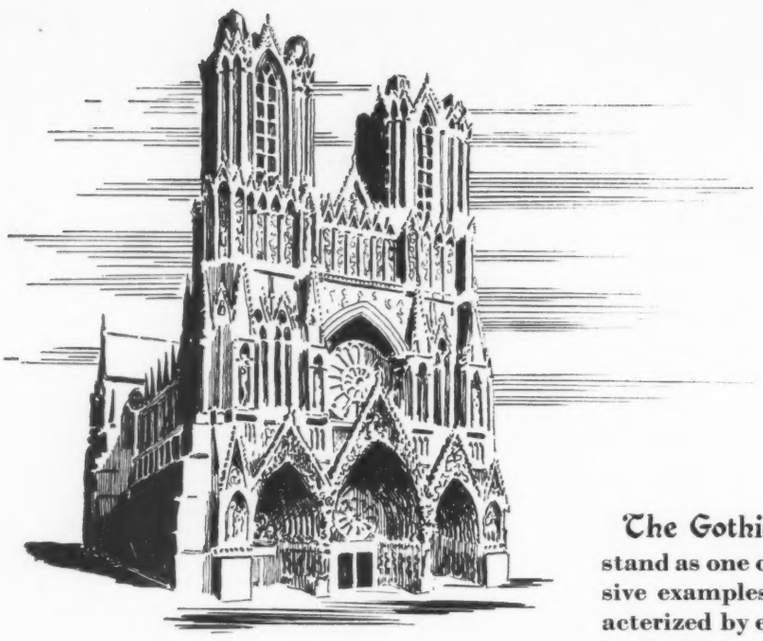
DOBECKMUN

Self-selling packages in processed films and foils



The Gothic Cathedrals of Europe stand as one of the world's most impressive examples of craftsmanship. Characterized by extraordinary lightness and verticality, their design has been an inspiration to architects all through the years.

AN INSPIRATION IN STONE

It is said that the beauty attained in the originals can never be truly imitated, for it was not only the design but also the painstaking skill and care exercised by the individual workman, which helped lift these edifices from the realm of the ordinary into that of the superb.

We at Carr-Lowrey appreciate the values of craftsmanship . . . of work carefully done. It is our constant guide in making glass containers for discriminating packagers. Perhaps that's one reason why the name Carr-Lowrey has occupied a place of high esteem for over 57 years.

CARR-LOWREY GLASS CO.

Factory and Main Office: BALTIMORE 3, MD. *New York Office:* 500 FIFTH AVE. (18) *Chicago Office:* 1502 MERCHANDISE MART (54)

THIS IS NUMBER EIGHT IN A SERIES ILLUSTRATING THE HISTORY OF PAPERBOARD AND FOLDING CARTONS

WHEN BOXES AND HATS WERE SOLD SEPARATELY

The box peddler was a familiar sight in early 19th Century streets. He sold hat boxes and band boxes and other similar containers made from paperboard. Frequently these boxes were used as traveling cases. Handmade by skilled artisans, they were quite expensive and not everybody could afford to buy them. Today, the paperboard folding carton brings both mass-produced and luxury goods to the American consumer—in fact it is one of the most important tools in modern merchandising and distribution methods.

UNITED PAPERBOARD COMPANY, INC.
PAPERBOARD FOLDING CARTONS
285 MADISON AVENUE NEW YORK 17, N. Y.

A complete series of these illustrations consisting of 12 pictures and carrying no advertising, will be sent on request.

PROMPT DELIVERY!

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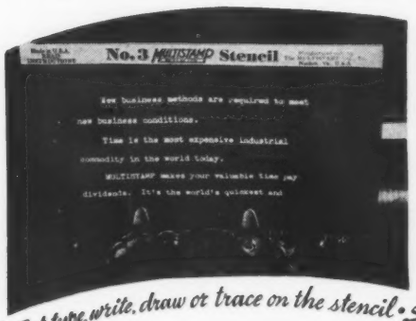
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New business methods are required to meet
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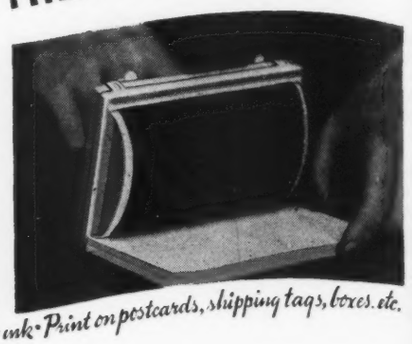
MULTISTAMP saves your valuable time pay
dividends. It's the world's quickest and



Just type, write, draw or trace on the stencil • Snap it on Multistamp. Quick, automatic, touch no ink • Print on postcards, shipping tags, boxes, etc.

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...AS WELL AS ON CARDS, PAPER, ON OR INSIDE BOOKS OR FILES, ETC.

1 Rubber Stamp Size for Shipping Tags, Labels, Cards, etc.

The No. 1 MULTISTAMP is a flexible rubberless hand stamp that takes the place of rubber stamps. Prints up to 5 lines of type, 3 in. long. Eliminates retyping and slow hand-addressing — it has a thousand uses around any office or shipping department.

Complete with supplies in compact case. Weight: 2lbs. **7.50** Non-Mechanical Outfit. F.O.B. Factory

3 Post Card Size for Larger Tags, Labels, Notices, etc.

The No. 3 MULTISTAMP is the "Rocker Type" Duplicator that prints on practically anything. Size 5¼ in. long by 3¼ in. wide. A single stencil can contain up to 32 lines of type. No experience required to operate MULTISTAMP.

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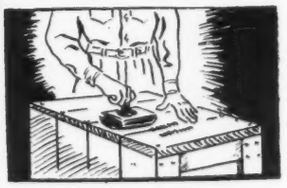

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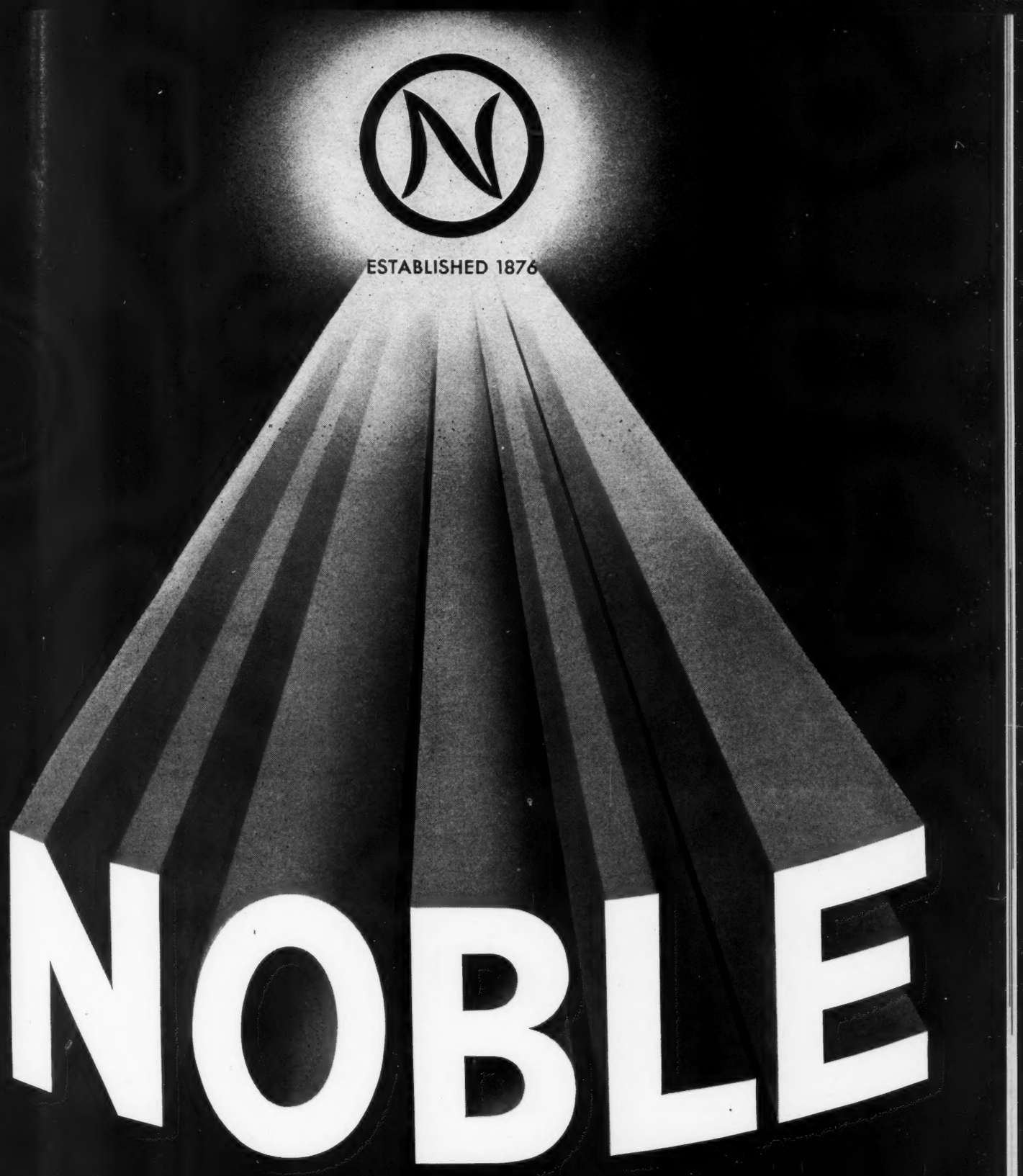

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METAL PRESENTATION BOXES

TROPHIES • MEDALS • BALL CHARMS

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" . . . our former method of stapling required 8 men 8 hours to seal 500 bags. An Acme Silverstitcher, built specially to accommodate bags, was installed. The loading-sealing crew reduced to 7; wire stapling costs dropped 85%; output exactly doubled . . ."

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DOUBLES PACKING OUTPUT

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- Galvanized to resist rust, corrosion
- Always uniform in width and gauge
- Makes stronger, surer closures than other methods . . . unaffected by weather
- One-piece, continuous length, 5 and 10 pound coils . . . cuts threading time

SilverStitchers REG. U.S. PAT. OFF. — BOX STITCHING MACHINES

- Adjustable, single pedal control
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- Heavy duty construction . . . low power consumption . . . for long thrifty service
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Sealing Shipping Containers by Stitching is Faster, Stronger and More Economical

ACME STEEL COMPANY

NEW YORK 7 ATLANTA CHICAGO 8 LOS ANGELES 11

TO BE SEEN IS TO BE SOLD!

Put your product in visible, transparent Shaw-Randall packages . . . packages that tell the customer, "You'd better look into this."

Shaw-Randall's experience in creating and fabricating acetate containers of many kinds is at YOUR product's service. Shaw-Randall packages win prizes from the judges . . . win loyal acceptance from the public.

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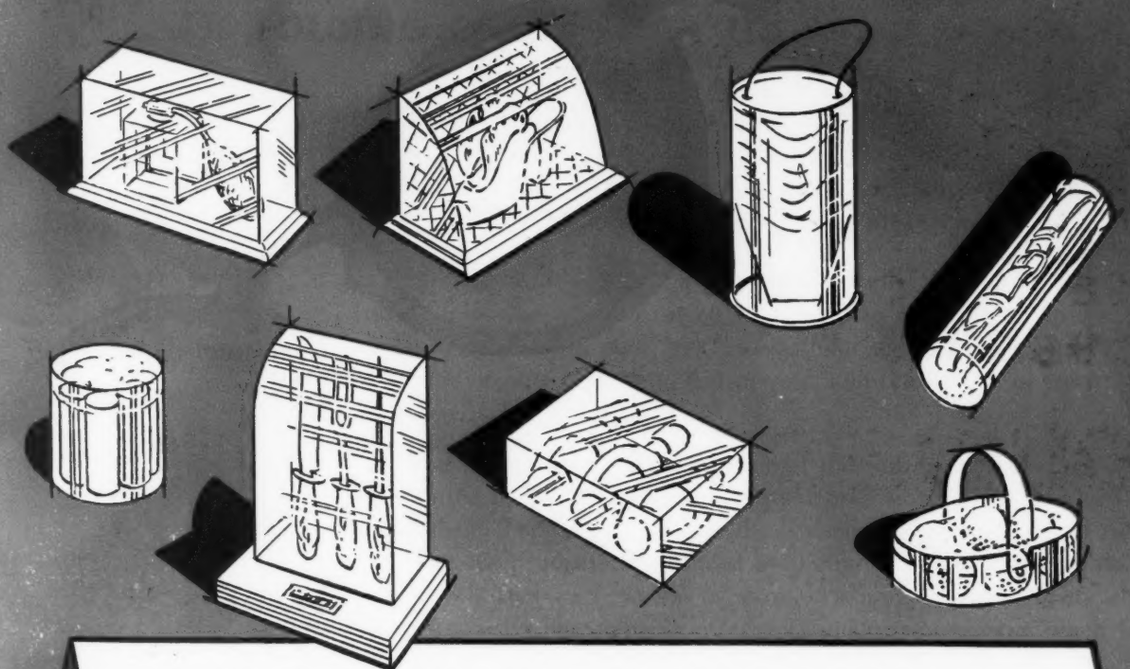

SHAW-RANDALL HAS HIGHLY SPECIALIZED FACILITIES FOR CREATING and PRODUCING

ACETATE PACKAGES ★ LEAD FOIL POUCHES

DIE-CUT CONTAINERS

ALSO DIE CUTTING AND ASSEMBLY

of all types of paper products including newsboard and special laminated papers.

SHAW-RANDALL CO.

A DIVISION OF THE SHAW PAPER BOX COMPANY · PAWTUCKET · R · I ·

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BOSTON SALES AGENCY — H. B. W. SNELLING, 53 STATE STREET

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good look!

MAYBE ONE OF THESE TWO FAMOUS GARDNER-RICHARDSON FOLDING CARTONS IS "IT" FOR YOUR PRODUCT

Moisture-resisting Hydrotite Cartons. Made of a time-tested paperboard with three-layer construction. Asphaltic center layer retards to a high degree both the entrance and the escape of moisture. Helps guard against weight losses and moisture absorption.

If you have a product which requires effective (very high, but not 100%) moisture-vapor protection, *Hydrotite* may be the answer to your needs. Why not find out? Ask us—without obligation—to make up some sample *Hydrotite* cartons to test in your laboratory and in your machines.

Coated Lithwite Cartons. Made of the whiter, brighter, revolutionary *clay*-coated paperboard which was pioneered seven years ago by Gardner-Richardson. Today, *Coated* Lithwite is used to package many of America's most famous products. Produced by the most modern method, its smooth, hard, chalk-free surface has a more brilliant, more uniform whiteness, insures sharper, brighter printing . . . makes more *eyes* reach for your product on shelves and in mass displays.

As you might expect, demand for this quality board has exceeded supply. But provision is now being made to increase *Coated* Lithwite production, making it available in larger sheets for a greater range of carton sizes. It may be that this new size range will be particularly advantageous to your carton needs. Your request for additional information will be welcomed.

The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard • Middletown, Ohio

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

One billion!

PACKAGE INSERTS

● Package Inserts are small in size, but, oh-so-big in accomplishment. The stories they can tell and the jobs they can do are myriad. They travel in the product package "for free"—no distribution cost. They get there, positively, with the product. They land right in the hands of actual, active users of your product . . . your best potential for repeat and additional business.

The one-billionth Package Insert designed and produced by Forbes might well have been one of those shown above. We passed that total some time ago. That represents a wealth of experience, ability and capacity which can be of inestimable help to you.

Just write, wire, phone or teletype. We'll put this experience to work for you pronto.

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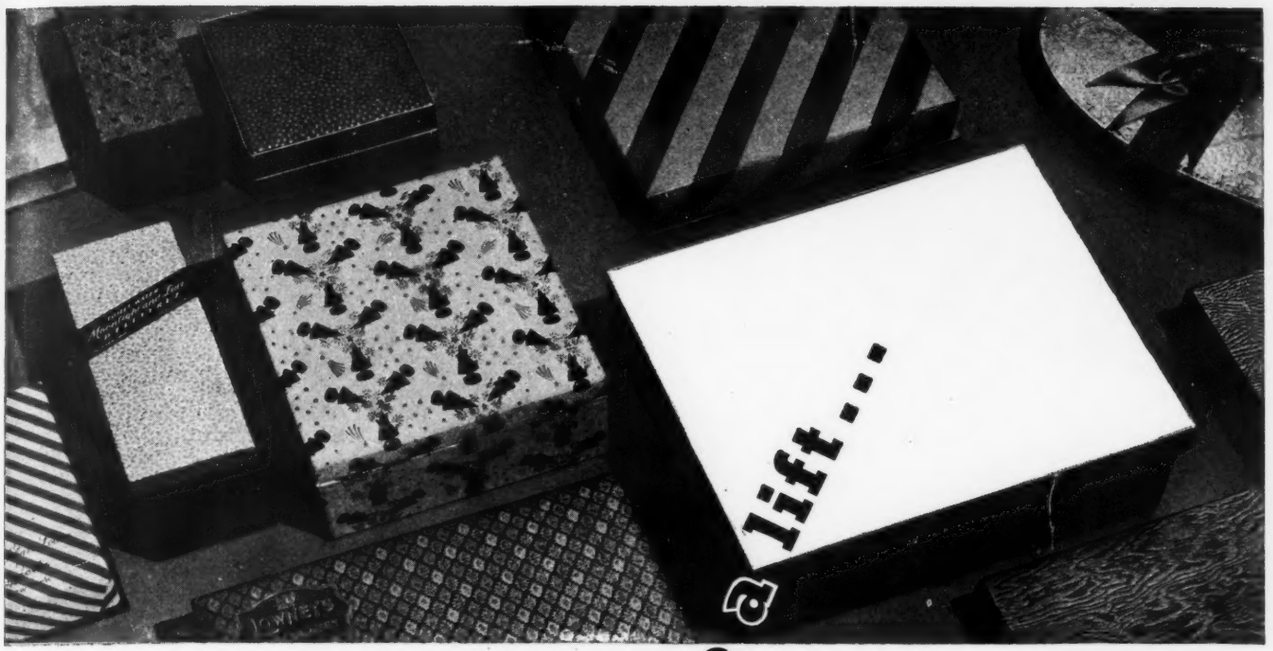
P.O. Box 513 Boston 2



...give your package a lift...

with a kupfer raised paper

. . . It will enhance its value and double your sales . . . at little more than the cost of flat papers. KUPFER embossed papers are realistically reproduced to simulate lace, leather, cloth, metal and foil in all types of stock, colors, gold and silver. A distinctive note is attained with KUPFER trade-marked papers where your own trade mark, or a new one, is incorporated in your package design.

SEND FOR SAMPLES AND CATALOG. CHOICE OF OVER 5000 PAPERS.

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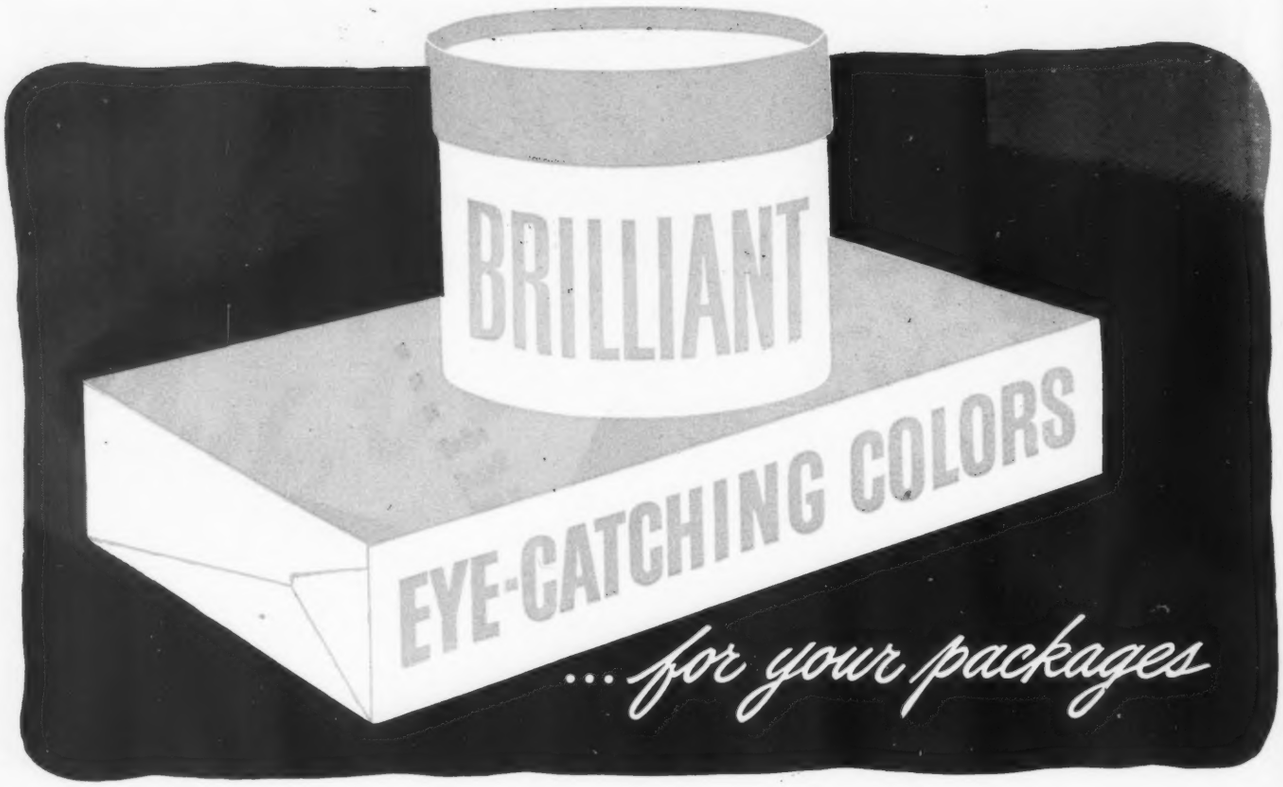


LATEST DEVELOPMENT IN PRINTING INKS... DRIES AT ONCE, ODORLESS

Many food, confectionery and tobacco packaging problems are now eliminated by the use of this quick-drying, odorless ink . . . HYDRY.

Developed by Michigan Research Laboratories, subsidiary of Sun Chemical Corporation, HYDRY is a moisture-set-ink—on presses equipped with steam applicators it drys and hardens instantly! No more waiting days or weeks for ink to dry. Waxing, folding or die-cutting operations can be started as soon as sheets come off the press.

And HYDRY is absolutely odorless—no residual ink odors to affect milk, cheese, butter, shortening, meat, cakes, breads, cereals, ice cream, sugar, flour, chewing gum, candy, tobacco or any one of numerous other products. Prints bright and clean, in a full range of brilliant colors.

Check your packaging problems against HYDRY's features in the box below. Write on your letterhead for 16-page booklet describing characteristics of HYDRY and giving practical information for use.

- **Fast Drying**—Dries on most stocks in 10 to 30 minutes; on presses equipped with steam applicator, dries *instantly!*
- **Odorless**—Finished prints entirely devoid of ink odor.
- **Brilliant Colors**—Ink film reflects light, gives brilliance and cleanliness.
- **Non-Offset**—Possibilities of offset reduced to a minimum.
- **Non-Smear**—Dry-hard finish extremely resistant to rubbing and smearing.
- **Non-Crystallizing**—Can be overprinted, even after several weeks.
- **Sharper Printing**—Does not spread or bleed.
- **Folding Qualities Improved**—Affords better moisture content in paper.
- **Improves Heat-Sealing of Waxed Wrappers**—Will not mix with wax film during heat-sealing operations.

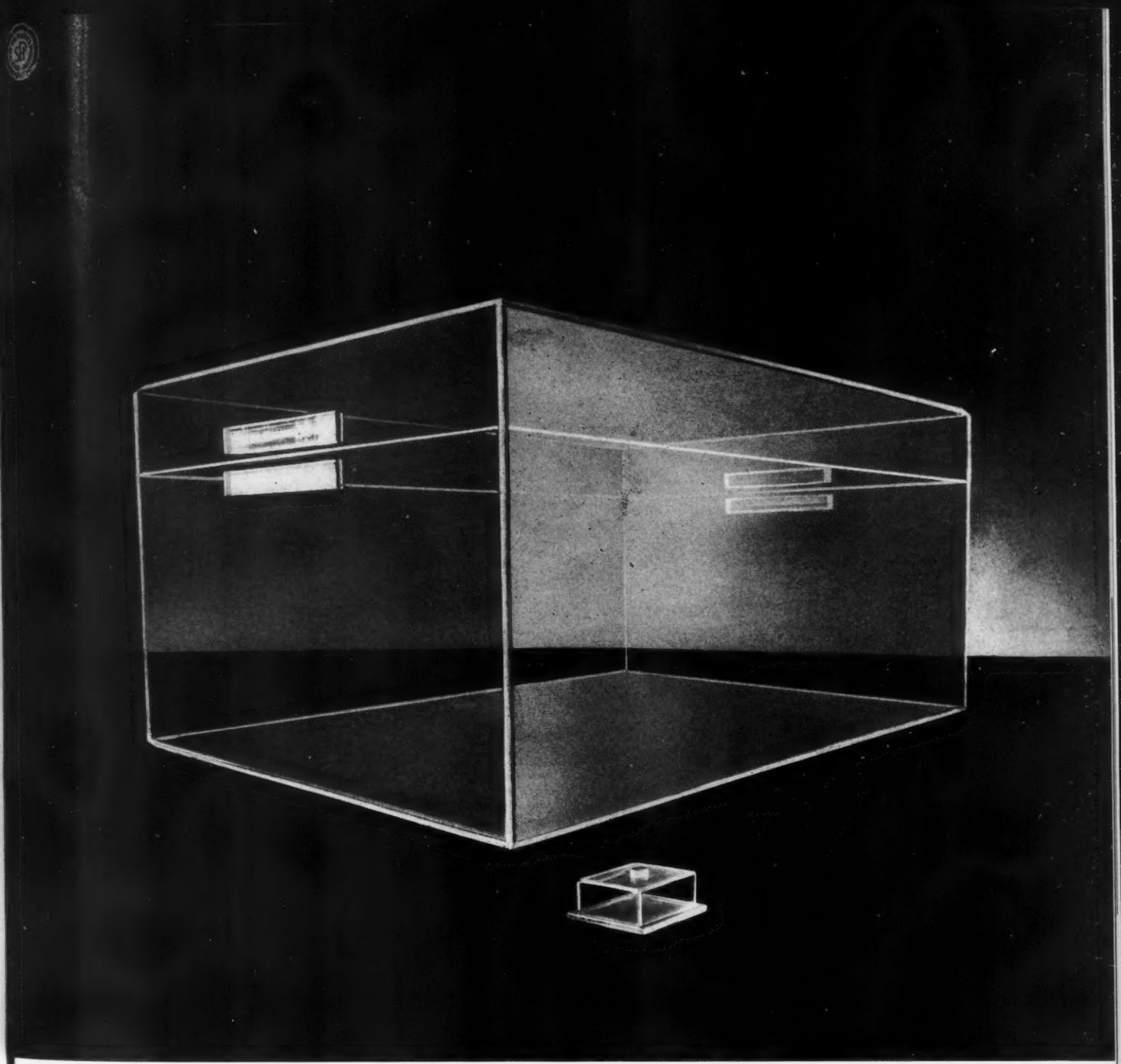
hydry

GENERAL PRINTING INK COMPANY DIVISION

Sun Chemical Corporation, 100 Sixth Avenue, New York 13, N. Y.

American Printing Ink • Eagle Printing Ink • Fuchs & Lang • Geo. H. Morrill • Pacific Coast • Sigmund Ullman
E. J. Kelly Company • General Printing Ink Corporation of Canada, Ltd.

Sun CHEMICAL CORPORATION



Have YOUR Products Try These On For Size!

Plexiglas Packages of *any* size and shape for *any* type product. Prompt delivery promised. The Jumbo Package, 18″x12″x8″; the Midget Package, 1″x½″x¼″.

BLUE RIVER PLASTICS

MANUFACTURING CORPORATION

Fabricators and Designers of Plastic Originals

329 CANAL STREET, NEW YORK 13, N.Y. • WAlker 5-2679

F. J. Nussbaum, President

cried we—"not ever!"—we didn't raise our voice. The loud and violent splashing—was Willie in his bath. Our men were *solid bottom*—on that we stood and do. Jump in and stand beside us—they'll amply care for you.

FOR CLARITY, COLOR AND CONSISTENT QUALITY

HAYNES LITHOGRAPH COMPANY, INC.

1140 East-West Highway **Silver Spring, Maryland**

NOW BEING PRODUCED AT NO. 1 PLASTICS AVENUE

GENERAL ELECTRIC SUGGESTS PLASTICS PACKAGING

"tops" at selling manicure sets!

THIS NOVEL molded plastics package by Northeastern Products, Inc. enjoys greater popularity every day—and sells a record volume of nail polish remover and cuticle softener. The ladies like top hat manicure cases—keep them for re-use as containers for cigarettes, jewelry. and powder.

For this original plastics packaging idea, General Electric congratulates Northeastern. The top hat, with its silken black finish, is now being molded by G.E. to meet a well-deserved demand.

If you have an idea for packaging your product in plastics, bring it to G.E.—the world's largest manufacturer of finished plastics products.

G.E.'s *complete* plastics service is ready to help you win sales with the latest techniques. G-E designers work with *all* plastics materials and will help you select the one best suited to your packaging requirements. You may consult them on the preparation of your own design for economical plastics production. Or you may ask them to submit to you a number of original designs.

Find out about plastics packaging possibilities. Write to Section P-4, Plastics Divisions, Chemical Department, General Electric Co., 1 Plastics Avenue, Pittsfield, Mass.

GENERAL ELECTRIC

CD46-P4

EVERYTHING IN PLASTICS

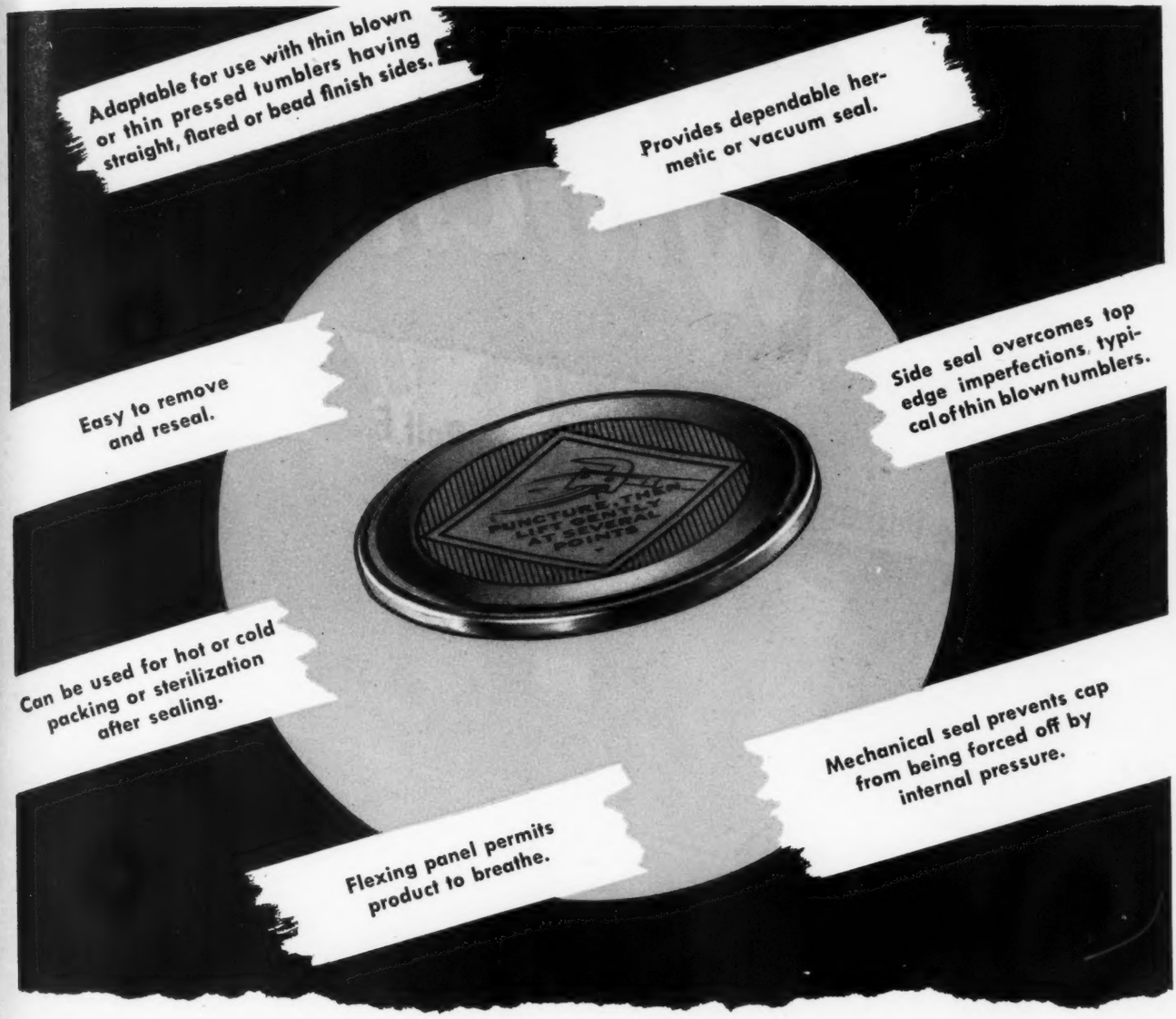
LITHOGRAPHY
COLORS...LACQUERS
PRECISION WORKMANSHIP
...all by HEEKIN

HEEKIN CANS

With Harmonized Colors

THE HEEKIN CAN COMPANY, CINCINNATI, O.

FINER LITHOGRAPHERS OF METAL CANS SINCE 190


Adaptable for use with thin blown or thin pressed tumblers having straight, flared or bead finish sides.
Provides dependable hermetic or vacuum seal.
Easy to remove and reseal.
Side seal overcomes top edge imperfections, typical of thin blown tumblers.
PUNCTURE TH
LIFT GENTLY
AT SEVERAL
POINTS
Can be used for hot or cold packing or sterilization after sealing.
Mechanical seal prevents cap from being forced off by internal pressure.
Flexing panel permits product to breathe.

This Anchor Cap Will Suit You to a "T"

THE ANCHOR T CAP is designed for use on all types of thin blown or thin pressed tumblers. Its mechanical side seal, effected by a flexible gasket, overcomes the two difficulties common to thin blown tumblers, particularly; top edge imperfections and the variations in finish size.

Since the cap is held in place mechanically rather than merely by a vacuum, it is unnecessary to allow headspace when packing. Nor will internal pressure caused by sterilizing or by exposure to sun or heat loosen the seal or force the cap off its container.

Other advantages include its adaptability. The Anchor T Cap is suitable for hermetic or vacuum sealing, hot or cold packing and sterilization after sealing.

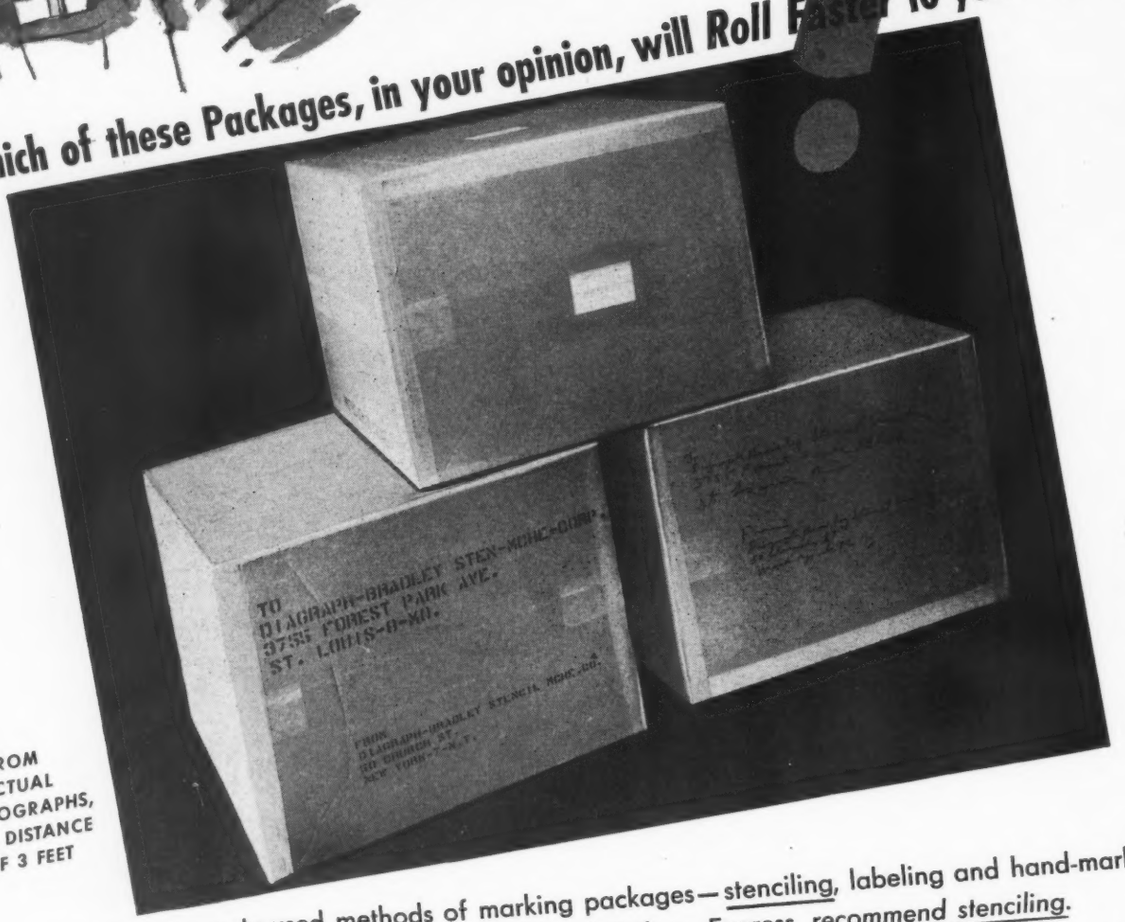
Users like it because it's easy to remove and because it serves as an effective closure to protect unused contents.

Tune in "Casey, Crime Photographer" every Thursday evening, entire Coast-to-Coast Network, CBS.

Anchor
CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

Which of these Packages, in your opinion, will Roll Faster to your customer?



FROM ACTUAL PHOTOGRAPHS, AT A DISTANCE OF 3 FEET

These are three commonly used methods of marking packages—stenciling, labeling and hand-marking—common carriers, such as the railroads, truckers and Railway Express, recommend stenciling.

Why take a chance—rain and damp weather obliterate type or hand written labels—avoid hand addressed mistakes—illegibility—labels coming off—lost shipments—delayed shipments.

Stencil address your shipments to keep your packages out of the carriers' Lost Shipment Warehouse.

Stenciled Shipments Roll Faster

THE WORLD'S OLDEST AND LARGEST MANUFACTURER OF STENCIL CUTTING MACHINES

D.B. REG U. S. PAT OFF

DIAGRAPH-BRADLEY
STENCIL MACHINE CORPORATION
ST. LOUIS 8, MISSOURI

DISTRIBUTORS IN PRINCIPAL CITIES—SEE CLASSIFIED SECTION—TELEPHONE DIRECTORY—STENCIL CUTTING MACHINES

OVER 100 D-B ITEMS FOR THE SHIPPING ROOM

MARYLAND GLASS CORPORATION, BALTIMORE . . . NEW YORK: 270 Broadway . . . CHICAGO: Berman Bros., Inc., 1501 S. Lafiin St. CINCINNATI: J. E. McLaughlin, 401 Lock St. . . . KANSAS CITY: Aller Todd, 1224 Union Ave. . . . MEMPHIS: S. Walter Scott, 608 McCall Bldg. ST. LOUIS: H. A. Baumstark, 4030 Chouteau Ave. . . . SAN FRANCISCO: Owens-Illinois Glass Co., Pacific Coast Division, 135 Stockton St.

DON'T LET YOUR COMPETITOR GET THE JUMP ON YOU

In the June issue CHAMBON made an important announcement to inform you and your competitor of resumption of production. We reprint it here for your convenience. Service letters, phone calls and personal visits to our New York headquarters resulting from the announcement indicated a far greater interest in the "NEW IMPROVED CHAMBON" than even we had anticipated. Better see for yourself what can be done for you.

In 1887

M. Louis Chambon of Paris, France, developed and perfected the first of a long line of rotary printing presses now known throughout the world as THE CHAMBON.

In 1936

The same Chambon Family, through its Paris Headquarters, Machines Chambon, and the English branch, Chambon Limited of London, announced the opening of its American affiliate in New York.

In 1946

After almost sixty years of continuous production under one organization, serving almost every region throughout the world where printing equipment is used and after having served American Industry for ten years from the New York Office and Plant, NOW IN 1946, with the termination of the war, we can again offer you the combined services of our world-wide organization—European production, American installation and parts replacement, and services of our combined press engineering staffs.

L. CHAMBON CORPORATION

Sole American Headquarters

320 WEST 46th ST. • NEW YORK 19, N. Y., U. S. A.

Chambon Rotary Printing Equipment from 7" to 28" (Aniline, Letterpress, Offset, Rotogravure) Diecutting, Sheetcutting or Rewinding Attachments; Slitters and Rewinders from Tissue to Cardboard; Laminating and Coating Attachments. Complete line of Converting Equipment for Cigarette Papers; Box-Printing and Forming Machines (Folding and Set-up.)

Will it stand the *Split-Second* test?

She enters the store and walks slowly through the aisles. She pauses before an assortment of merchandise — she makes her selection.

At that all-important moment of pause — in a split second — eye-appeal took charge and the buying decision was made. Surveys show that American women make 75% of all their buying decisions just that way.

Will your packaged product attract her attention — will it stand the split-second test?

MEMBER FLEXIBLE PACKAGING INSTITUTE fpi

YOU HAVE THE PRODUCT — A. P. G. HAS THE PACKAGE

Sales-building cellophane or glassine bags and envelopes. Custom-built for your own particular needs. A complete range of stock sizes — printed or plain.

Smartly styled opaque envelopes in special prints, and in any size you may require, as well as all stock sizes — printed or plain — in special papers or regular grades.

A. P. G.'s experienced representatives are ready to assist you in developing a package with real eye-appeal — a package that will win sales in the split-second test.

The American Paper Goods Co. OVER 50 YEARS OF SERVICE

KENSINGTON, CONNECTICUT CHICAGO, ILLINOIS

Sales Offices — New York · Chicago · Boston · Philadelphia · Charlotte · Atlanta · Cincinnati · Minneapolis · Fort Worth · San Francisco · Seattle

In the year 1483 a fellow named Matthias printed the first fancy paper in England. A piece of this first run was discovered in Cambridge, England, in 1911, and it is carefully preserved in a British Museum.

The only thing *that* proves is that 500 years ago Matthias was "first" in fancy paper. The present Matthias Paper Corporation is right up front in packaging papers today.

Progressive paper box manufacturers seeking private designs in attractive paper are especially well advised to bring their problems to Matthias Paper Corporation at 165 W. Berks Street, Philadelphia 22, or Box #127, Wellesley, Mass., or to Guilford Bldg., Greensboro, N. C.

FOOD GOES TO MARKET...BETTER... SAFER...AND MORE SALEABLE IN WET-STRENGTH PAPERS

made with

PAREZ** RESIN 607

High wet-strength paper—paper that is extra strong when dry and when exposed to moisture—is giving new protection to foods, new convenience to the user, a new and profitable specialty to the paper manufacturer. Bags, vegetable and meat wrappers, labels for canned goods, barrel and crate liners—all these grocery and food store paper products are stronger, longer-lasting, more satisfactory when given the advantage of wet and dry strength imparted by PAREZ Resin 607.

PAREZ Resin 607 imparts improved wet and dry strength to any type of paper from paperboard to fine tissue. It also improves fold endurance, printing qualities, and wet-rub resistance. Paper stocks can be produced by simply adding PAREZ Resin 607, as outlined in Cyanamid's Technical Bulletin 9-B, in the regular paper manufacturing process.

We shall be glad to supply paper manufacturers with complete data on PAREZ Resin 607 and its applications for the production of tougher, stronger, "ready-market" papers.

American Cyanamid & Chemical Corporation

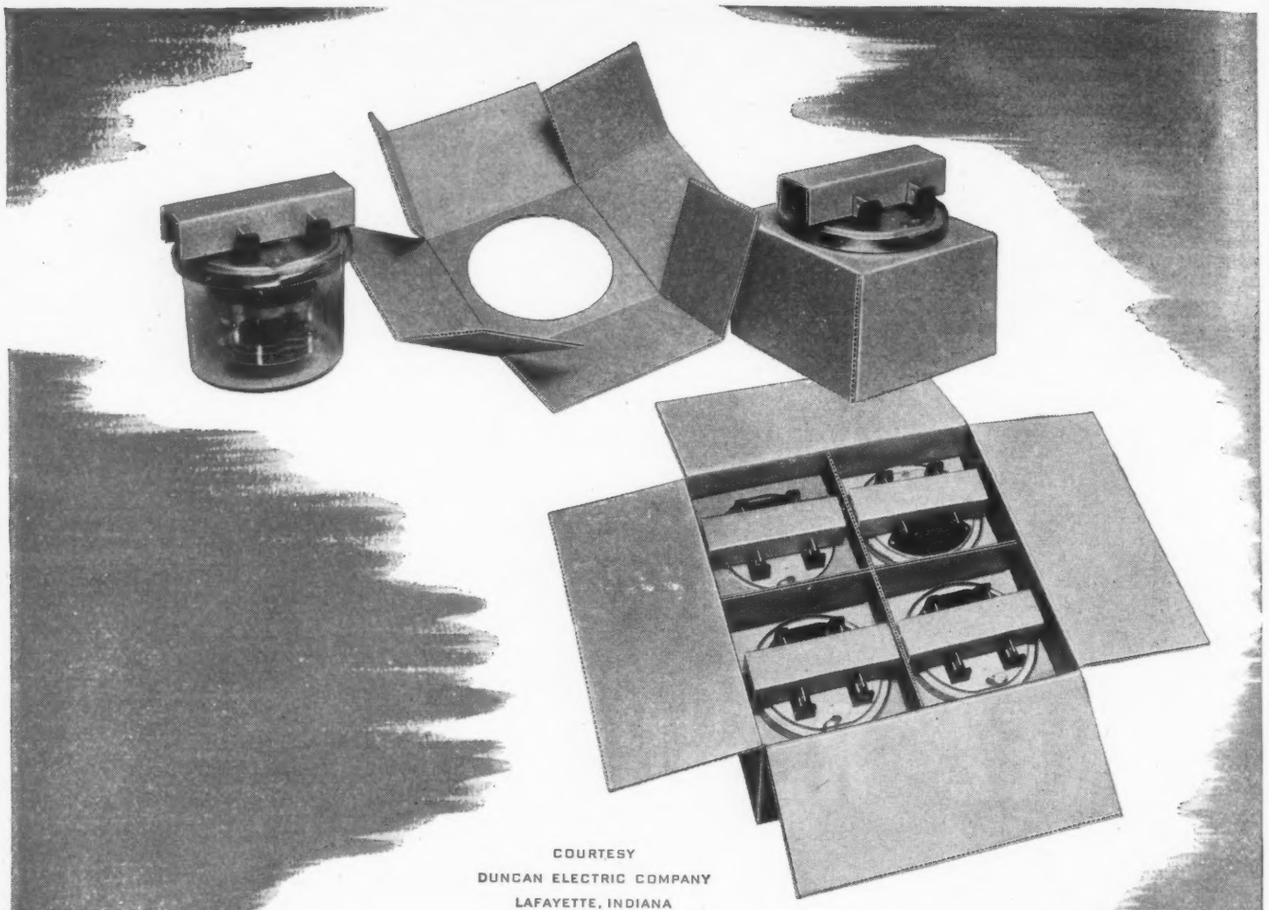
(A Unit of American Cyanamid Company)

30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

DISTRICT OFFICES: Boston, Mass.; Philadelphia, Pa.; Baltimore, Md.; Charlotte, N. C.; Cleveland, Ohio; Chicago, Ill.; Kalamazoo, Mich.; Detroit, Mich.; St. Louis, Mo.; Azusa, Calif.; Seattle, Wash. In Canada: Dillons Chemical Company, Ltd., Montreal and Toronto.

**Trade-mark of American Cyanamid & Chemical Corporation covering its synthetic resins for use by the paper industry. The processes under which PAREZ Resin is applied in the production of wet-strength paper are covered by U.S. Patent Nos. 2,291,079; 2,291,080; and 2,345,543; and U. S. Patent Application Serial No. 453,032.

Waxes • Wax Sizes • Resin Size
PAREZ** Resins • Synthetic Resins
Casein • Alum • Sulphonated Oils
Fillers • Defoamers • Soda Ash
Caustic Soda • Salt Cake • Acids • Clays
Satin White • AEROSOL*
Wetting Agents • Calmicro
(Calcium Carbonate) and
other Paper Chemicals
*Reg. U. S. Pat. Off.



COURTESY
DUNCAN ELECTRIC COMPANY
LAFAYETTE, INDIANA

"Package by Inland"

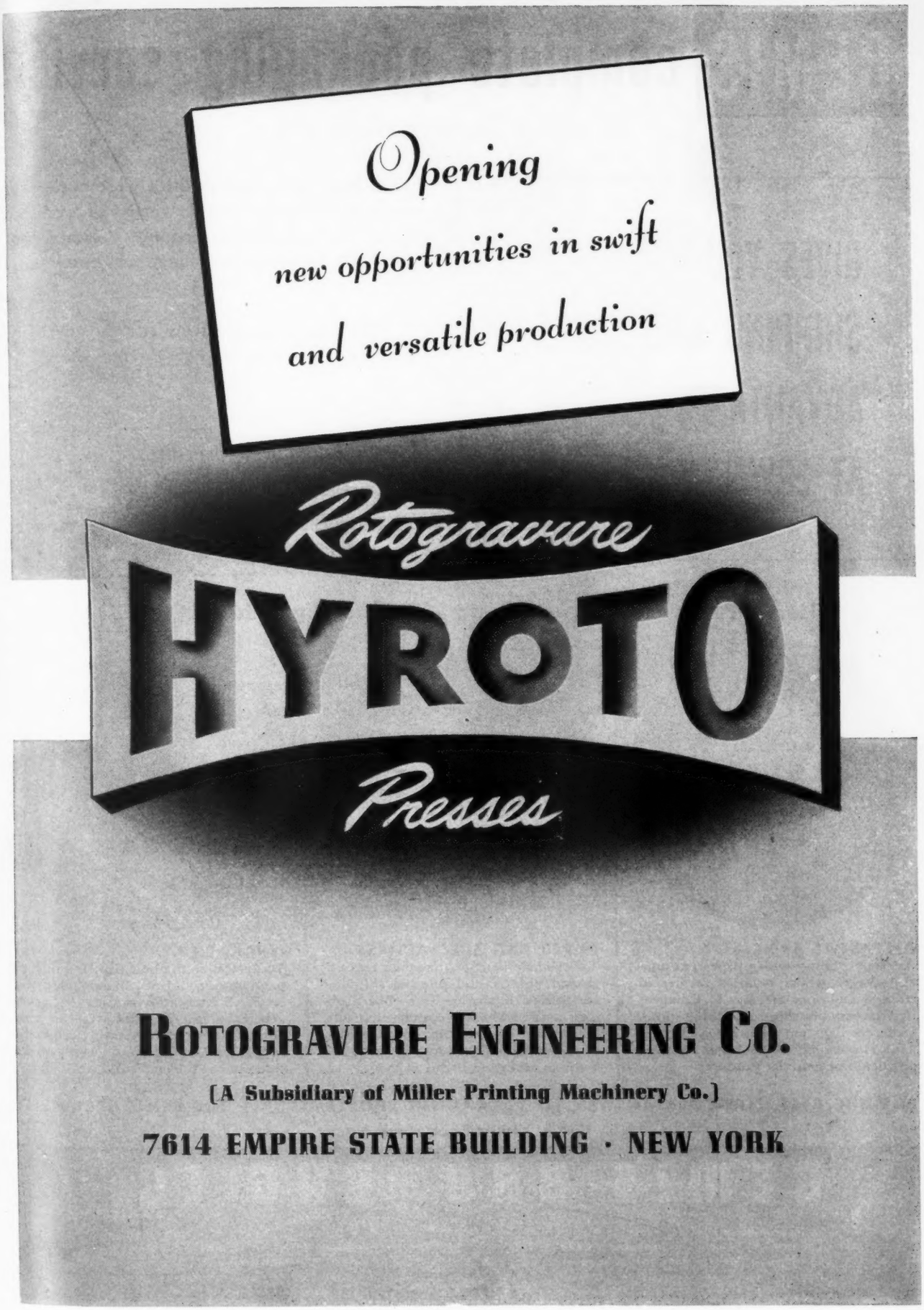
★ Every protection against shock or stress has been carefully developed in this container for delicate precision meters. Thorough checking in Inland Laboratory and actual shipments have proved this design.

★ There is a "Package by Inland" for every requirement.

INLAND
CONTAINER CORPORATION
Corrugated Fibre Boxes

INLAND BOXES

INDIANAPOLIS, INDIANA • EVANSVILLE, INDIANA • MIDDLETOWN, OHIO • CINCINNATI, OHIO
DAYTON, OHIO • CHICAGO, ILLINOIS • MILWAUKEE, WISCONSIN • DETROIT, MICHIGAN


Opening
new opportunities in swift
and versatile production
Rotogravure
HYROTO
Presses
ROTOGRAVURE ENGINEERING CO.
[A Subsidiary of Miller Printing Machinery Co.]
7614 EMPIRE STATE BUILDING · NEW YORK

BEMIS complete packaging service

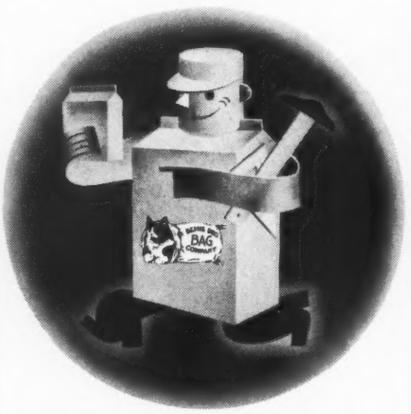
GIVES YOU SHIPPING AND SALES ADVANTAGES AT LOW COST

Bemis bags and services fill a wide variety of packaging needs, for a wide variety of products. On new or established products—either consumer or industrial—remember Bemis for:

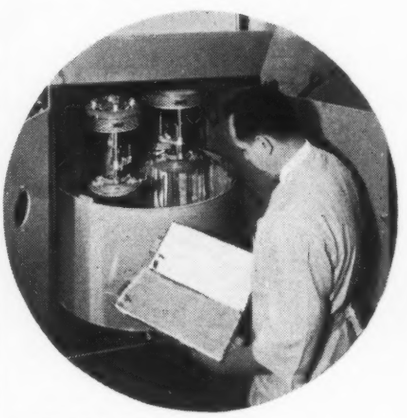
1. Outstanding facilities for production, brand printing, and servicing.
2. Consultation service on package design.
3. Engineering service on filling, closing, and handling operations.

Here are three of the ways Bemis is serving industry today!

DELTASEAL BAGS—
Attractive and popular paper consumer-packages which retailers feature in counter and floor displays. Housewives like the easy-pouring, self-closing spout. Deltaseal Bags are used for packaging flour, rice, sugar, salt and many similar powdered or granular products.



PAPER BAG SPECIALTIES—
Tailor-made bags for irregular or odd-shaped objects, and unusual shipping conditions. Bemis analyzes your problem and makes recommendations. Mattresses, cans, coffins and a variety of other out-of-the-ordinary products are now packed in Bemis Bags.



RESEARCH—
To determine the best handling of your packaging problems, Bemis Shipping Research Laboratory studies your products. Laboratory and field tests are conducted. Safety, practicability, economy, appearance are all considered to make sure the bag selected will do the job.

FOR THE BEST, LOW-COST ANSWER TO PACKAGING PROBLEMS CALL THE BEMIS SPECIALIST
1054 S. Vandeventer, St. Louis, Mo.

BEMIS BRO. BAG CO.

Baltimore • Boise • Boston • Brooklyn • Buffalo
Charlotte • Chicago • Denver • Detroit
E. Pepperell, Mass. • Houston • Indianapolis
Kansas City • Los Angeles • Louisville
Memphis • Minneapolis • Mobile

BEMIS BRO. BAG COMPANY

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Embosses
as beautifully as it *Prints*

Champion Kromekote

THE CHAMPION PAPER AND FIBRE COMPANY . . . HAMILTON, OHIO

District Sales Offices: NEW YORK • CHICAGO • PHILADELPHIA • DETROIT • BOSTON • ST. LOUIS • CINCINNATI • ATLANTA • SAN FRANCISCO

Barrington Hall Instant Coffee, a product of Hygrade Food Products Corp., is heat-sealed in a combination structure of Alcoa Aluminum Foil and acetate sheet supplied by The Dobeckmun Company for use on a Stokes & Smith machine.

All that's missing from this packet of coffee

is the water

The flavor is there, the aroma, the full body . . . everything to make a cup of good coffee is packed in these individual servings. And *held* there, sealed airtight, in heat-seal packets made from Alcoa Aluminum Foil.

Moisture and air cannot get through the foil to cause oxidation or lumping of the hygroscopic coffee powder. Flavor and aroma cannot escape to leave the coffee flat and tasteless. And aluminum, friendly to food, won't impart strange odors and flavors to the product.

Whatever you pack . . . coffee or chemicals, powders or tablets, foods or drugs . . . consider a heat-seal package formed from Alcoa Aluminum Foil and a plastic laminating sheet. You'll get a package that will travel better, increase customer acceptance and convenience, and keep your product just the way you want it.

Leading converters of packaging materials are experts in the production of structures using Alcoa Aluminum Foil in combination with other materials. And package machinery builders are experts on filling and sealing these materials. Put your packaging problem up to them. Or write us for their names.

ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA
ALUMINUM

ALCOA ALUMINUM FOIL

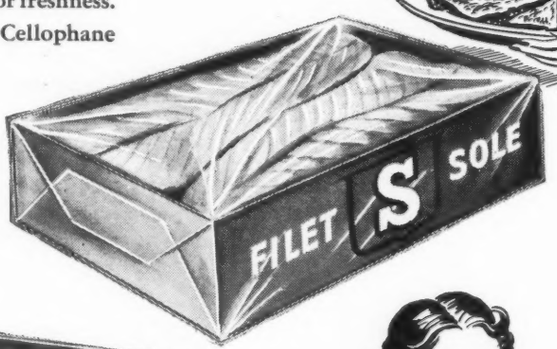
It's SYLVANIA for Cellophane

to protect cigarettes

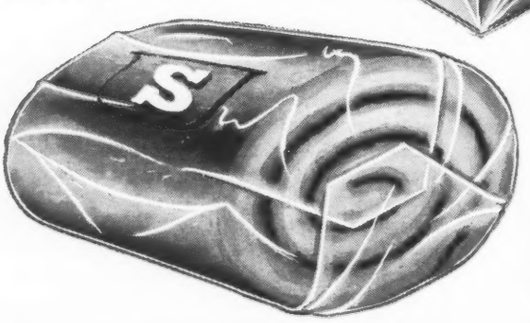
Tobacco, frozen foods, baked goods or confectionery... Each type of product requires a different type of packaging material—and there's a Sylvania Cellophane to meet their requirements! For this glistening wrap is more than beautiful. It is air, dust and moisture-proof... offers an impregnable barrier against loss of flavor freshness.

You can expect today's Sylvania Cellophane to look better and give better protection than ever before—protection that will be available for even more products in the coming months.

...and sole



...and jelly roll!



SYLVANIA CELLOPHANE

Made only by SYLVANIA INDUSTRIAL Corporation

Manufacturers of cellophane and other cellulose products since 1929

Sales Office: 122 E. 42nd St., New York 17, N.Y. ★ *Plant and Principal Office:* Fredericksburg, Va.

SYLVANIA CELLOPHANE

•Registered Trade Mark

Mark-it for Market

with

PALM BROTHERS DECALS

House of Croydon points with pride to the identification of its fine toiletries with Palm Brothers Decals. And justly so, for discriminating producers everywhere select Palm Brothers Decals for immediate customer recognition of their products — distinctively and positively.

Your products, too, will take on additional character when marked with Palm Brothers Decals. You'll find decided advantage in their ease of application, their permanency and economy.

See for yourself how a Palm Brothers Decal can benefit your product. Write today. We'll be pleased to prepare individually designed sketches, quote prices, and furnish complete information. No obligation, of course.

THE PALM BROTHERS *Decalcomania Co.*

CINCINNATI . . 12 . . . OHIO . . U. S. A.

Now Ready—

for you to lead the Packaging Parade

These four dominating designs represent the forerunners of a series of NEW DESIGNS, NEW COLORS and NEW MATERIALS that are being released in Marvellum's parade of *Papers Distinctive.*

These new papers are created with arresting BUY-APPEAL that you can fabricate into your sales picture — BUY-APPEAL that commands attention for your packages and repeats for your sales.

Modern as Tomorrow, Marvellum's new series of *Papers Distinctive* present a profitable line of practical papers.

Samples of the above designs in actual colors await your request.

THE MARVELLUM COMPANY

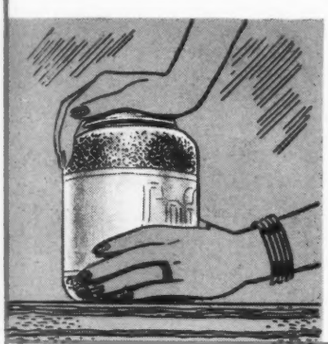
• Papers-Distinctive •

HOLYOKE
MASSACHUSETTS

GLASS RATES 2 to 1
AS THE PREFERRED FOOD PACKAGE
AMONG HOUSEWIVES!

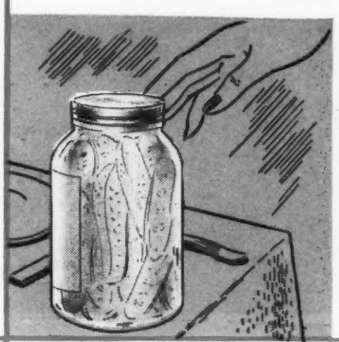
A glass container helps attract, sell and *keep sold!* Women voted 2 to 1 for glass-packed foods* in a recent national survey conducted by a noted public opinion analyst**!

Here are some of the reasons why women prefer to buy foods in glass:



PROTECTION

Coffee, for example, is delivered at the peak of its freshness, and the Ultra-Vac jar may be re-sealed after each use.

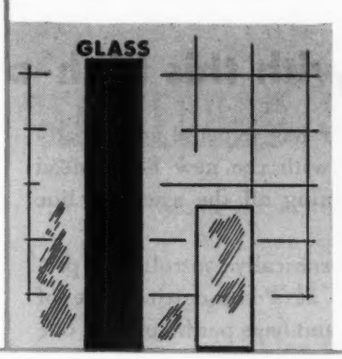


ATTRACTIVENESS

Glass containers are so attractive that many of them (for pickles, preserves, etc.) are placed right on the table.

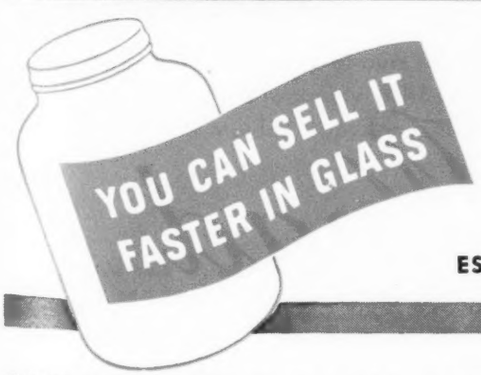
CONVENIENCE

Time- and work-saving advantages are largely responsible for such preferences as the 4 to 1 for salad or cooking oil in glass. Easy to pour. Easy to clean. No waste.



PREFERENCE

The preference for glass is particularly noticeable among younger housewives. The overwhelming vote of 3 to 1 for glass-packed foods by this group is a definite trend.*



The popularity of glass containers is growing . . . growing because their many advantages are basic. You sell more—need less selling time—with products packed in glass containers—Duraglas Containers!

*Average is based on eight key classifications: pears, peaches, fruit salad and cocktail, baby food, coffee, salad or cooking oil, beets, food-beverages.
**Name supplied on request.

ESPECIALLY IN Duraglas CONTAINERS

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • *Branches in Principal Cities*

MAKE YOUR OWN HEAT-SEALED BAGS . . . QUICKER!

Cut your costs . . . ELECTRONICALLY . . . with this high-output, low-cost bag-maker

Now you can cut your bag expense and greatly increase your output with the new Kono-Mead Bag Builder, now coming off the assembly line daily.

This machine is electronically controlled, to produce heat-sealed bags at a cost-cutting rate of 4 thousand to 15 thousand bags per hour. And one girl can easily operate it!

Bags can be flat or square, from 1½ to 9 inches wide and from 2 to 18 inches in length. May be made of Konophane, Pliofilm, cellophane, diaphane or any of the heat-sealing coated papers. For additional strength and protection, heat-sealing can be combined with glue-sealing, thus producing a seam stronger than the material itself.

Write for full particulars.

Kono-Mead

KONO-MEAD EQUIPMENT CO. 133-23 35th Ave., Flushing, N. Y. Phone: FLushing 3-8113

A WIRZ Customer wins in recent Veterans' preference survey

Palmolive and Colgate Shaving Creams came out first and second respectively in the recent drug products survey of Veterans of World War II conducted by the American Legion Magazine. Palmolive and Colgate polled 17.91% and 16.58% of votes for a list of 44 shaving creams. We congratulate the manufacturer of these two fine shaving creams, Colgate-Palmolive-Peet Company, a customer of ours for whom we have been privileged to supply WIRZ Collapsible Metal Tubes and Molded Caps for many, many years.

ESTABLISHED 1836
A. H.
WIRZ
Inc.

Fourth & Cole Sts. • CHESTER, PENNA.

New York 17, N. Y. 50 E. 42nd St. | Chicago 4, Ill. 80 E. Jackson Blvd. | Memphis 2, Tenn. Wurzburg Bros. | Havana, Cuba Roberto Ortiz Planos | A. G. Spilker, 1709 W. 8th St., Los Angeles 14, Calif. and Danville, Calif.

Export Division: BALLAGH & THRALL . . . 751 Drexel Building — Philadelphia 6, Pennsylvania

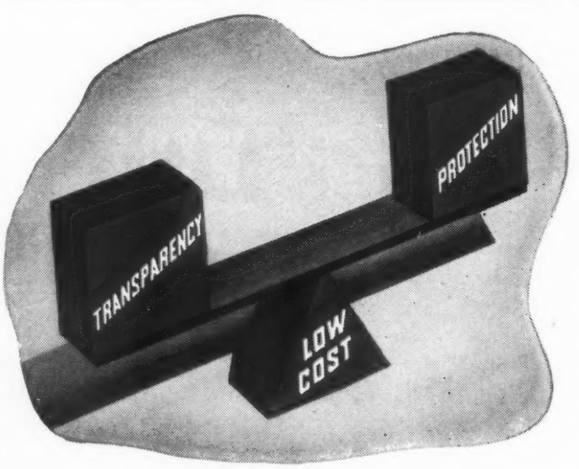
Collapsible Metal Tubes • Soft Metal Tubing • Westite Closures • Household Can Spouts • Applicator Pipes • Compression Molding

Big job ahead for self-service package

ATTRACTING SHOPPERS is the first step in making the *impulse* sales that account for a substantial part of retail store volume. The package must get the shopper's attention . . . tell her all she wants to know. Transparency does this job effectively by making the product its own salesman.

PROVIDING PROTECTION against handling, soilage and flavor-loss often calls for special packaging characteristics. The 56 types of Du Pont transparent films (Cellophane, cellulose acetate and polyvinyl films) are chemically tailored to meet a wide range of protective requirements.

FITTING INTO an economical operation is an important requisite of the effective package. Alert manufacturers are scrutinizing all aspects of marketing costs and looking for the package that will do a merchandising and protective job efficiently and economically.



THE RIGHT BALANCE of packaging factors is available in Du Pont Cellophane. It provides sales-building transparency plus necessary protection—*at lowest cost*. The demand for Cellophane still exceeds the supply, but we hope our converters and ourselves can soon supply all needs.

Write for new booklet, "Design for Selling." E. I. du Pont de Nemours & Co. (Inc.), Cellophane Div., Wilmington 98, Del.

DU PONT Cellophane *Shows what it Protects—at Low Cost*

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

HOW THE BLADE *that isn't there* WORKS TOP-SEALING "MAGIC" WITH *Staples*

Autoclench stapling carton containing two connecting rods.

Several times more corrugated shipping containers are stapled by the average operator . . . when Bostitch Autoclench races a blade-equipped machine. Compared with other sealing methods . . . hand-applied glue, tape, etc. . . . the advantages also favor Autoclench Bostitching.

This outstanding example of how *"Bostitch fastens it better, faster with wire"* derives its superiority from the fact that a unique pre-formed staple is driven and clinched *without the use of a sealing blade*. The design of the staple and the mechanism of the machine combine to effect a quick, tight closure — "drum and drop test" proven.

Investigate Autoclench now. Send for Folder 132.

AUTOCLENCH ADVANTAGES

Quick operation . . . Secure seal . . . Human error minimized . . . Won't obscure printing . . . No drying time . . . Discourages pilfering . . . Unaffected by moisture . . . No damage from staining . . . Staples removable for container reuse . . . Economical to buy and operate.

BOSTITCHING
offers you the MOST in stapling

Experience... 1896 50 years specializing in fastening

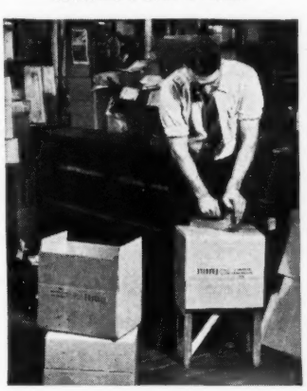
Engineering... 18 research engineers

Selection... Nearly 800 models

Service... 91 offices, over 200 Bostitching specialists — increasing as products and trained men become available.

BOSTITCH
fastens it better, AND FASTER with wire
ALL TYPES OF STAPLES APPLIED BY MACHINES
ALL TYPES OF MACHINES FOR APPLYING STAPLES

Autoclench bottoming empty containers over a form.



New Motorized Autoclench — available soon.

Bostitch (Boston Wire Stitcher Co.),
500 Mechanic Street, Westerly, R.I.
Bostitch-Canada, Ltd., Montreal).

Please send Folder 132 on Bostitch Autoclench.

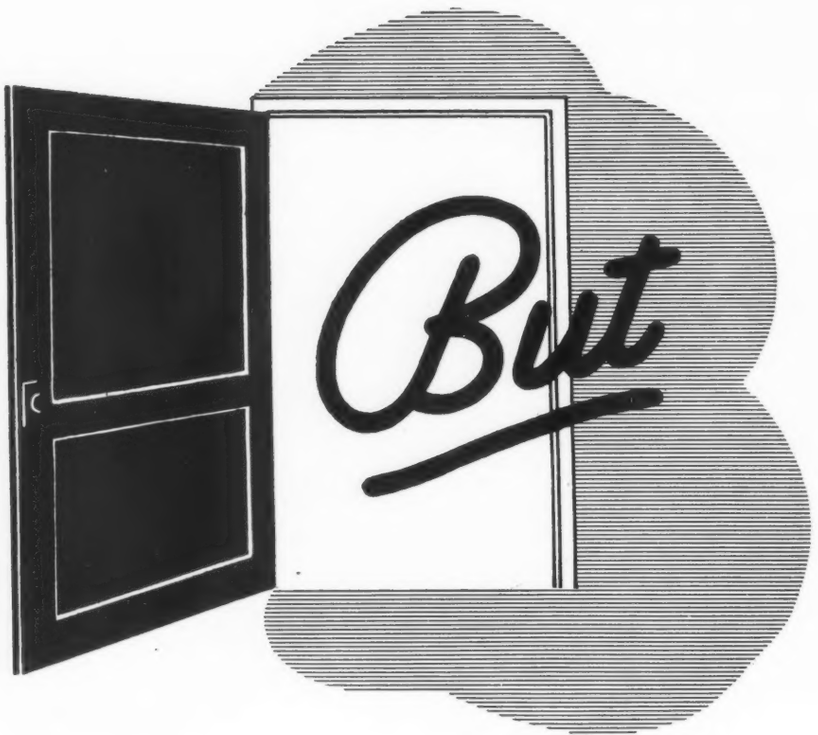
Name .....

Company .....

Address .....

.....

OUR DOOR IS OPEN . . .



Our door is open. We welcome inquiries and any opportunity to make our experience in packaging available to those with problems. . . .

BUT—and it's a big BUT—while we can give advice and counsel at this time, WE CAN NOT PROMISE TO ACCEPT ANY NEW ORDERS EXCEPT FROM ESTABLISHED CUSTOMERS, FOR AN INDEFINITE PERIOD.

Our facilities, large as they are, are being strained to the utmost to accommodate those we already serve. And our first duty is to make sure we fulfill our first obligations faithfully—first.

WALTER P. MILLER COMPANY, Inc.

Creators and manufacturers of SET-UP Paper Boxes

452 YORK AVENUE · PHILADELPHIA 23 · PENNA.

In a bevy of beauties . . . it takes that EXTRA something to win . . .

LAMCOTE

adds extra beauty to any printed package

AS with bathing beauties — so it is with packages! Your package must outshine competition. LAMCOTE succeeds in adding that winning extra attractiveness!

Eye-catching! Beautiful! Desirable! With refinement and "polish" that puts Lamcoted packages in the Blue Ribbon class. Its gleaming protection glorifies every printed package — adds flexibility and tensile strength. Keeps out moisture and dust — repels grime — withstands handling indefinitely. Lamcote's eye-compelling, sales-stimulating beauty *wins every time.*

LAMCOTE is the PROCESS of permanently affixing a lustrous, transparent, tough film of plastic to the surface of paper, cardboard, fabric or other material.

1001 SALES-BUILDING USES

Point-of-purchase advertising displays, direct mail, catalogs, book covers, die-cut novelties, box-wraps, fabrics, specialties and many others.

Lamcote REFLECTS THE QUALITY OF QUALITY PRODUCTS

METAL PAPERBOARD PLASTIC

WRITE NOW for LAMCOTE samples and details.

ARVEY CORPORATION

3462 N. Kimball Ave.
Chicago 18, Illinois

•

300 Communipaw Ave.
Jersey City 4, New Jersey

How to make a free sample cost less!

If you are concerned about the cost of your free samples, you'll be interested in Mistol's experience.

Basically, Mistol's idea was excellent: attach a sample of Mistol drops to every bottle of Nujol. In practice, however, it turned out to be less successful. Because the sample required no less than four individual parts—a glass vial,

cork, wire clip to attach the vial to the Nujol bottle and a separate circular describing the product. Expensive? Yes! Easily breakable, too. And complicated.

Then Mistol discovered Unitainer, Sun Tube's compact, attractive collapsible tube with the airtight break-off pin closure—and reduced those four parts to *two*.

Using Unitainer, a single piece of paper could make up the sample package, *including* a printed sales message.

So much simpler, the sample. So much easier for dealers to handle, for customers to use. And Mistol's purchasing agent *must* have liked it, because cost of the entire sample was greatly reduced.

HERE'S WHERE YOU COME IN

Perhaps you can adapt this tie-in sampling idea to one of your products. But whether you use samples or not, Mistol's experience may help you solve your own packaging problem. Because it is typical of the countless ways in which Sun Tubes may be used. Not necessarily Sun Tube Unitainers—this one-shot tube is only *one* of the types of collapsible tubes our engineers design

to fit your particular product. Tell them your problem and they'll bring the same resourcefulness and ingenuity to bear on your individual requirements that solved Mistol's problem.

Worth remembering, too, is the **fact that new developments have made Sun Tubes the more economical, attractive container for a host of products never before considered prospects for a tube. Is *your* product among them?**

For information or advice, just phone or write Sun Tube's main office,

181 Long Avenue, Hillside, N. J., or our representative nearest you.

Sun Tube Corporation

HILLSIDE · NEW JERSEY

CHICAGO 1, ILL.
James L. Coffield, Jr.
360 No. Michigan Avenue

ST. LOUIS 1, MO.
M. P. Yates
Arcade Building

ST. PAUL 1, MINN.
Alexander Seymour
615 Pioneer Building

LOS ANGELES 27, CALIF.
R. G. F. Byington
1260 North Western Ave.

CINCINNATI 8, OHIO
Ralph H. Auch
3449 Custer Road

We're not new in Functional Papers

1913

when "rakish" hats complemented draped skirts . . .

Modern Thilco Wax Treated Papers provide Safe, strong Sanitary Protection . . . Longer

Thilmany *developed papers for Moisture-Vapor protection!*

TWO years after we established one of the first sulphate pulp mills in the country in 1911, we installed a 52" laminator for the production of waxed papers. Thus, focusing our attention on papers providing moisture-vapor protection, we pioneered serving the packaging industry with wrappers designed to preserve freshness and natural flavors in food products and prevent rust and corrosion in the packaging of metal products and parts.

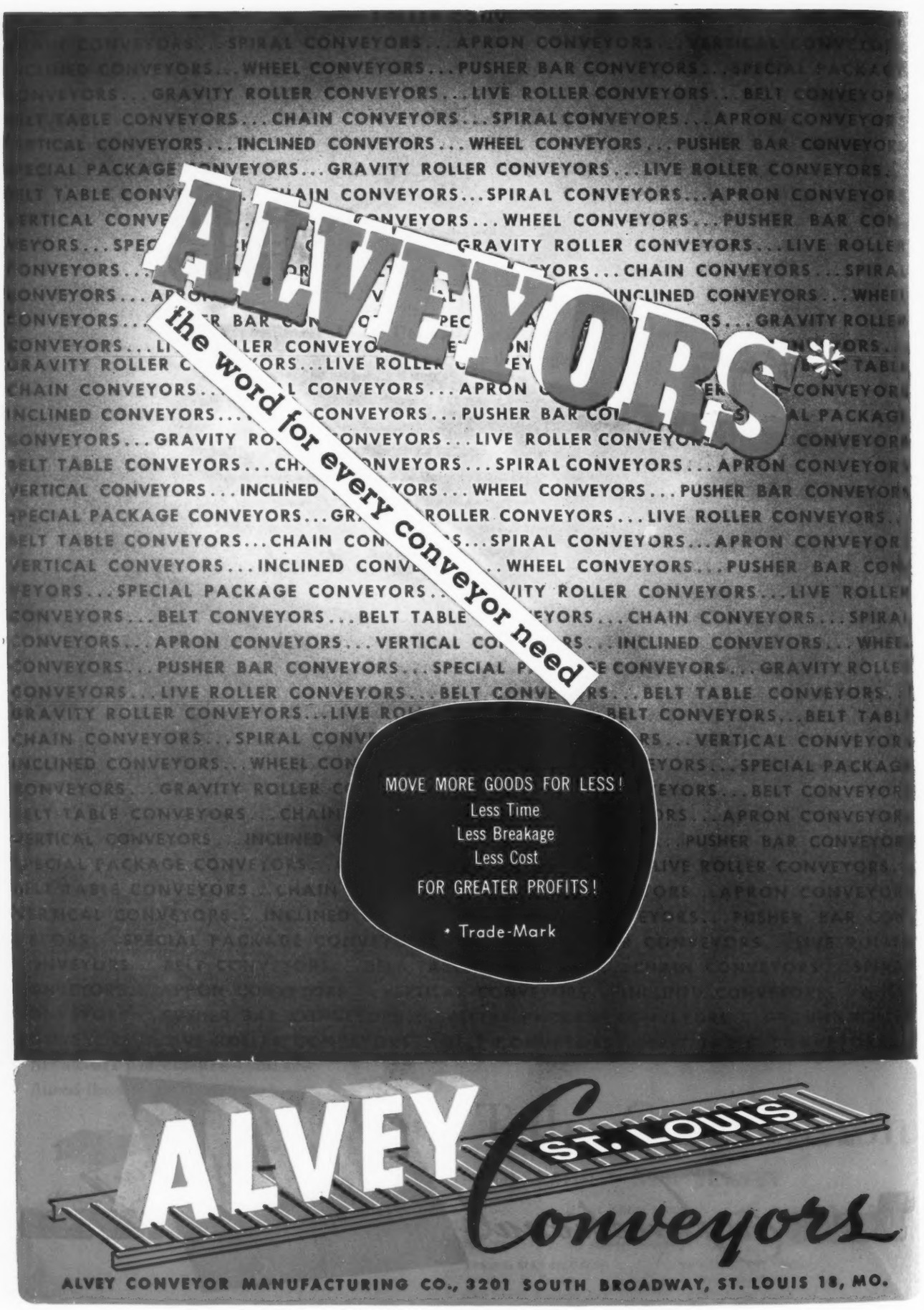
Wax-laminated Krafts have many essential qualities important to present day packaging. They are low in vapor-transmission, have good strength, are sanitary and pure for food wrapping, and transmit no stain nor odor. Limited tonnage is now available and can be "tailor-made" to your specific requirements.

In addition, we can print or emboss wax papers to provide effective identification and attractive advertising. These papers can also be converted into various types of bags . . . all within our own mill.

THE THILMANY PAPER COMPANY WAS FOUNDED IN 1883.

THILCO *Functional* PAPERS

THILMANY
PULP & PAPER COMPANY
KAUKAUNA · WISCONSIN


ALVEYORS*
the word for every conveyor need
MOVE MORE GOODS FOR LESS!
Less Time
Less Breakage
Less Cost
FOR GREATER PROFITS!
* Trade-Mark
ALVEY ST. LOUIS
Conveyors
ALVEY CONVEYOR MANUFACTURING CO., 3201 SOUTH BROADWAY, ST. LOUIS 18, MO.

Perfect!

for
PACKAGING FRUITS and VEGETABLES
fresh or frozen!

Moisture Stays In!
Moisture Stays Out!

PRIME-PAC

A TRACO PEARLON PRODUCT

Western Packer adopts Prime-Pac for 25-lb. carton packs!!

●

Southern Packer adopts Prime-Pac bags for frozen shrimp!!

●

Northern Packer adopts Prime-Pac bag liner for frozen cream!!

●

Perfect for Meats—Poultry—Fish!!

● Highly Moistureproof, Retains Garden Fresh Flavors! Odorless, Tasteless, Non-Toxic, Durable, Heatseals, Flexible at very low temperatures. Washable—Consumer can re-use bag time and again!

●

Write or Wire ... Dept. B
358 WEST ONTARIO ST.
CHICAGO 10, ILLINOIS

Traver CORPORATION

CONVERTERS—PRINTERS—CELLOPHANE—FOIL—ACETATES—GLASSINE—PLASTICS

VISIBLE PRODUCTS make *Visible Profits*

...IN AN *Arnrus* PLASTIC CONTAINER

All Shapes
All Protected
All Textures

Consumers are in a greater buying mood when your product is power-packed for a preview of pleasure—in an Arnrus Transparent Plastic Container.

Prominent and economical display—ever the sales "multiplier"—is a feature with Arnrus products. In styling . . . craftsmanship . . . economy, Arnrus visible sales aids lead the way to an increase in sales and protection for your product, at no greater cost.

Write today for Arnrus profit-making packaging plans.

NATIONAL TRANSPARENT PLASTICS COMPANY

SPRINGFIELD 1 MASSACHUSETTS

This is Velour sheen

with the velvety texture you love to touch

Velour sheen—the sensational new display packaging material not only stops the buyer's roaming eye, but packs a double sales punch by appealing to his—and especially her—sense of touch.

AVAILABLE IN THREE WEIGHTS

DRAPING BOX *(shown)* BOARD

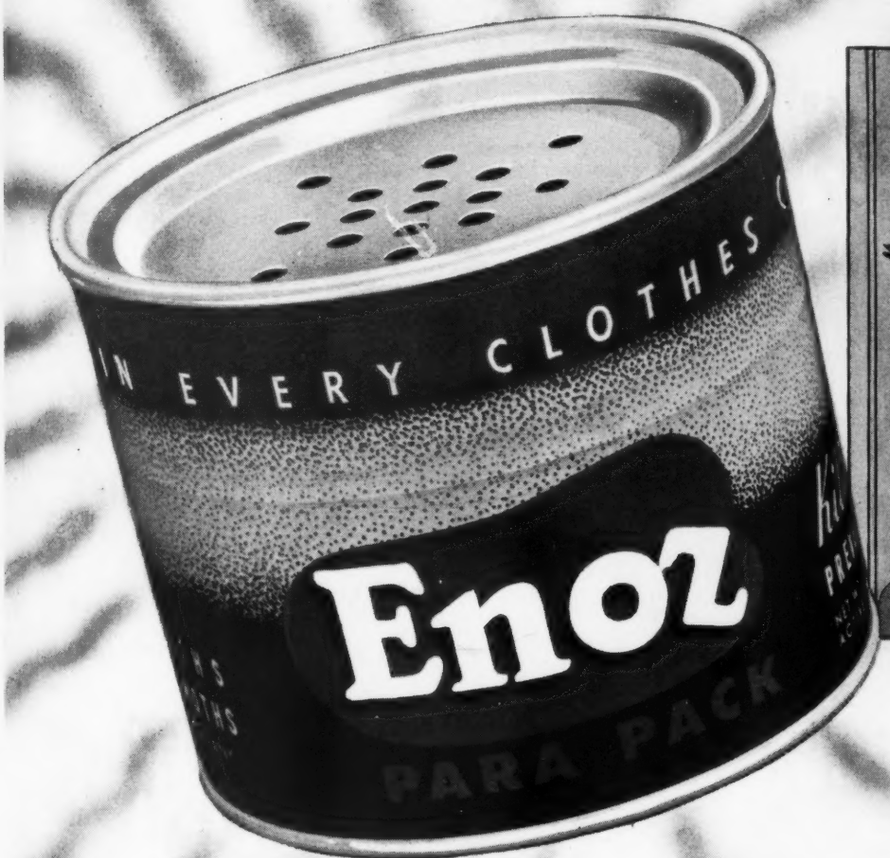
COLORS RANGE FROM
SOFT PASTELS TO BRIGHT
AND WARM SHADES

Write for Samples

BULKLEY, DUNTON & CO.
INCORPORATED
295 MADISON AVENUE, NEW YORK 17, N. Y.
CHICAGO 16, 2635 S. Wabash Ave. • LOS ANGELES 13, 124 W. 4th St.

Sefton designers create a successful can for ENOZ CHEMICAL CO.

Chicago



Kills Moths. Protects from Moths. Hangs conveniently in any closet.

Every manufacturer has a different packaging problem! Sefton designers, realizing this, create cans to fit each one's individual needs! Take the clever hang-up can designed for Enoz Para-Pack, for instance! It's a specially-made, string-opening can that is tamper-proof, can be used again and is especially appealing to customers. Sefton Fibre Can Co. is ready to design a can for your product . . . investigate today!

Sefton FIBRE CAN COMPANY

ST. LOUIS . . . . . NEW ORLEANS

DISTRICT OFFICES: • Los Angeles • San Francisco • Denver • Tampa • Chicago • Des Moines • New Orleans • Boston • Detroit • Kansas City • St. Paul Omaha • New York • Cincinnatti • Cleveland • Oklahoma City • Pittsburgh • Memphis • Nashville • Dallas • Houston • Salt Lake City • Seattle

Better-looking, *Shatterproof* CONTAINERS help to sell their contents

DRUGS — COSMETICS
SUNDRIES — TOYS
DENTAL SUPPLIES
TOOLS — FIRST AIDS
NOVELTIES *and Scores of other commodities;*

They get off to a better "SELLING-START" in Clearsite*

* Reg. U. S. Pat. Off.

SEAMLESS SHATTERPROOF FEATHERLITE *imprinted during manufacturing process*

the Plastic Container

Enlist the eye-appeal; enjoy the economy and shatter-proof protection of Clearsite—the Safety Base Plastic.

Write for samples and suggestions

CELLUPLASTIC CORP.

CELLUPLASTIC CORPORATION

PLASTIC CONTAINERS
AND
PLASTIC PRODUCTS

40 AVENUE L NEWARK 5, N. J.

NEW YORK OFFICE—630 FIFTH AVENUE WEST COAST: CONTAINER SERVICE COMPANY, LOS ANGELES 27, CAL.

Help her ~~plan~~ *see* a well balanced menu

Your post-war housewife is well up on food values; she knows her proteins, vitamins, carbohydrates, minerals, etc. You make her job easier and more pleasant when you pack in Hazel-Atlas Glass containers. She can see her needs at her dealers and always has a visual index on her shelves at home. It makes her menu planning efficient.

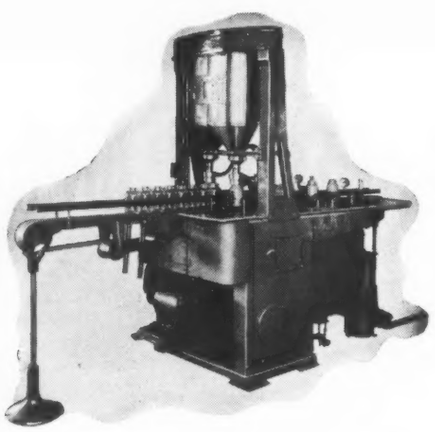
And speaking of efficiency, H-A containers are top performers on production lines.

Hazel-Atlas Glass Co.
Wheeling, W. Va.

The S&S "AUGER-VAC"

HELPS CUT PACKAGING COSTS

The fast, accurate and dustless feed of the "Auger-Vac" is saving money today for many prominent packers of such products as pulverized coffee, dehydrated foods, flour, cocoa, powdered milk, spices and ice cream mix.



Any powders requiring some packing to fill a tin, glass, fibre or other air-tight container, can be handled quickly, more accurately and with a minimum of waste by the "Auger-Vac," a combination auger-vacuum system.

The auger feed fills the desired amount of material with speed and accuracy; the vacuum method eliminates dust.

"Auger-Vac" method is available for use on the Stokes & Smith Single Unit machine (illustrated above) as well as on the various types of our HG-84 Duplex Heavy Duty Machine (shown at left).

We are unable to turn out machines fast enough to keep up with the current demand, however this would be an opportune time to consult Stokes & Smith engineers about the "Auger-Vac" adapted to the solution of *your* particular problems. Write today . . . no obligation.

STOKES & SMITH Co

FILLING • PACKAGING • WRAPPING MACHINES

FRANKFORD, PHILADELPHIA 24, U. S. A.

Speeds to suit your needs—15-30-60-120 per minute

"Better machines for better packages"

HERE'S WHY PLASTICS-MINDED PACKAGE DESIGNERS START with DUREZ

Over and above all others is one quality which the package designer requires in a plastic material. This is versatility. Because the phenolics are the most versatile of all plastics, he usually starts here when looking for the plastic that fits his job.

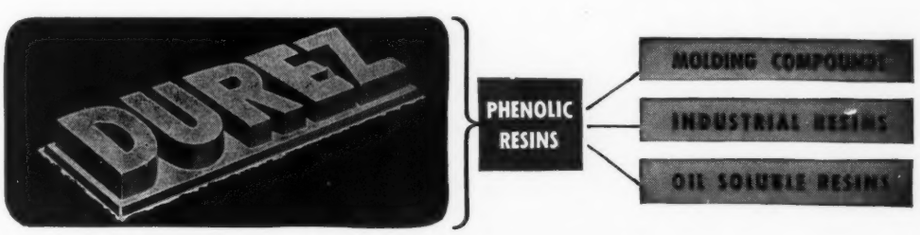
Non-bleeding, for example, is a "must" property when it comes to closures—one reason why more closures have been molded of Durez phenolics than of any other plastic material.

Then there is diversity of finishes—an important property for decorative containers. Again Durez phenolics meet the test. Various effects are easily achieved.

Excellent moldability, of course, is highly desirable too. Here again Durez "fills the bill" by being readily formable to unusual design.

In addition, the more than 300 Durez phenolic molding compounds possess, in varying degrees, such properties as heat resistance, impact strength, dielectric strength, and resistance to acids and alkalies—all invaluable to the imaginative designer.

Perhaps you have a plastic material problem. If so, the benefits which Durez' twenty-six years experience as specialists in the production of the phenolics can bring you and your custom molder, are available for the asking. Durez Plastics & Chemicals, Inc., 258 Walck Rd., N. Tonawanda, N. Y.



PLASTICS THAT FIT THE JOB

Leaders in industry look to

for the profitable answers to their packaging problems

Standard of the Packaging Industry

Corrugated and Solid Fibre Boxes

•

Folding Cartons

•

Kraft Grocery Bags and Sacks

•

Kraft Paper and Specialties

— greater protection that assures lower shipping costs

— perfect color harmony that adds new sales appeal

— scientific design for sound packaging

GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle • Indianapolis • Houston
Los Angeles • Oakland • Minneapolis • Detroit • Jacksonville • Columbus • Fort Worth • Tampa • Cincinnati
Dallas • Des Moines • Oklahoma City • Greenville • Portland • St. Louis • San Antonio • Memphis • Kansas City
Bogalusa • Milwaukee • Chattanooga • Weslaco • New Haven • Appleton • Hickory • Greensboro • Sumter

In Bottle Closures...

(In other packaging applications too)

Bottle closures shown molded by Lumalite Corp., Pawling, N. Y.

Du Pont POLYTHENE

GIVES YOU THESE ADVANTAGES:

- Polythene is chemically inert
- Polythene is tasteless, odorless, non-toxic
- Polythene is flexible and tough at low temperatures
- Polythene heat-seals readily
- Polythene keeps moisture in, keeps moisture out (Permeability [3 mils thickness] 30 grams/100 sq. meters/hour)

The unique combination of properties of polythene can serve the packager well in *many* applications. Wherever it is used, it helps to keep the product fresh for the consumer. Polythene can be made in a variety of attractive colors. For working samples and complete data, write E. I. du Pont de Nemours & Co. (Inc.), Plastics Dept., Room 578, Arlington, N. J.

Du Pont manufactures polythene molding powder.
Commercial extruders convert polythene into the forms of

SHEETS TUBES RODS FILAMENTS

DU PONT
REG. U.S. PAT. OFF.
Plastics
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Shelf competition demands a package that *Stands Out!*

When shoppers' eyes scan dealers' shelves your product can stop them and turn "eyers" into buyers—if it is packaged in an A. C. M. *Clay Coated* Carton!

These famous cartons stand out on dealers' shelves because they're "stand-outs" in quality. Their pure-white, velvet-smooth surface, produced by an exclusive, continuous process, assures perfect reproduction of any design in either letterpress or lithography.

There's a luster and brilliance to A. C. M. *Clay Coated* Cartons that puts them out in front wherever displayed. They do the dual job of capturing attention and selling the quality and value of the product they contain.

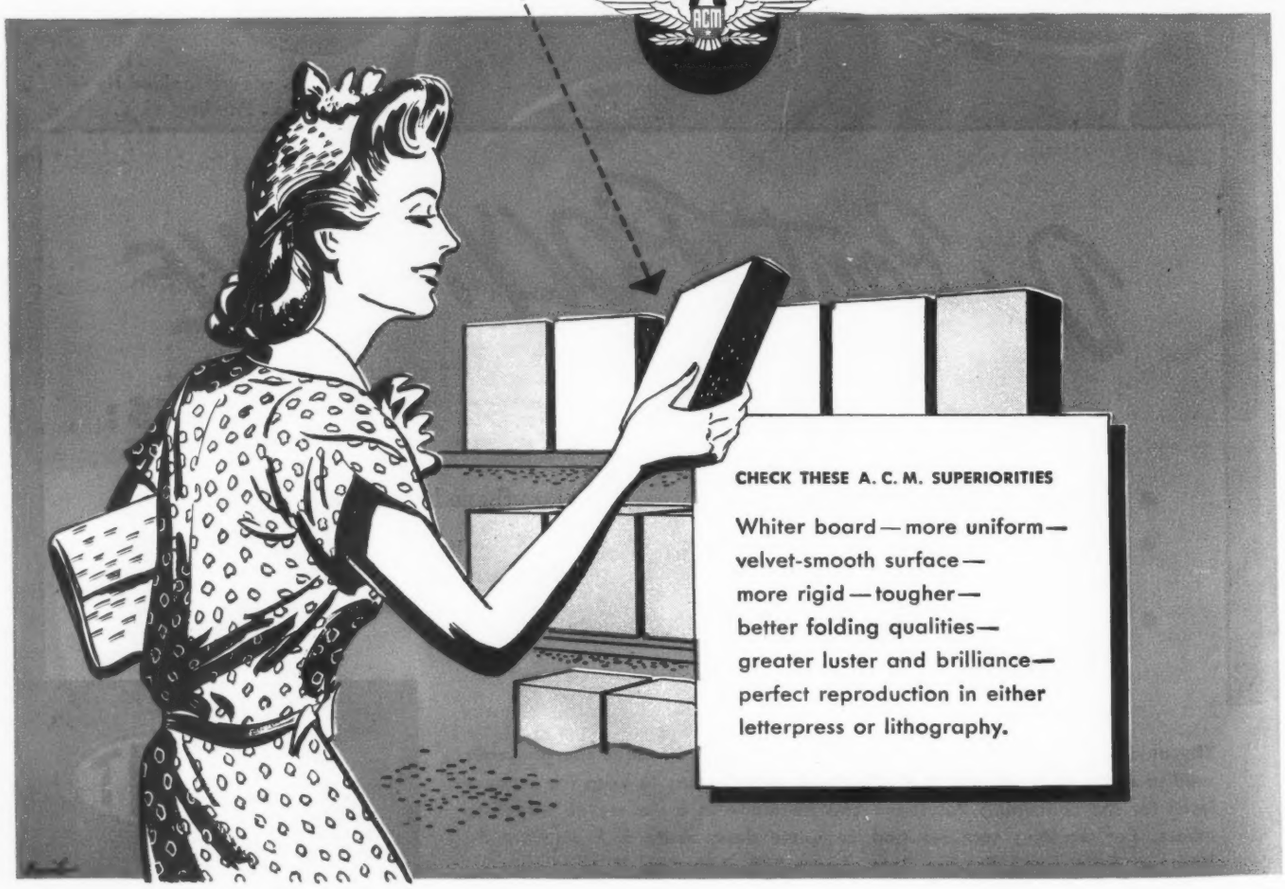
AMERICAN COATING MILLS, INC.

America's leading producer of high quality Clay Coated Cartons and Carton Board

Elkhart, Indiana • Chicago • New York

Affiliated Company: Modern Packages, Inc., Memphis, Tenn.

The Secret is in the SURFACE!



A.C.M. Clay Coated Cartons

and carton board

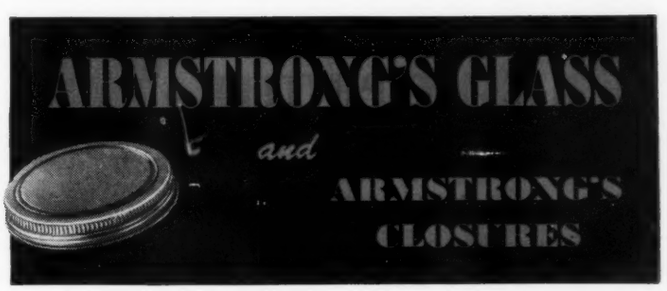
"Hidden weaknesses come to light here!"

Peering at an Armstrong's bottle through a polariscope in the control room at Armstrong's Millville, New Jersey, glass plant is Earl Martin, veteran of 24 years of glassmaking. Listen while he tells a group of Armstrong's salesmen how the use of this modern testing device helps safeguard the quality of the glass you get from us.

"With the polariscope, we can quickly spot in the bottles any hidden weaknesses resulting from improper cooling—or annealing, as glassmakers call the cooling process. A well-annealed bottle seen through the polariscope reveals an even, well-spaced, dull-colored line pattern. If the annealing is faulty, the line pattern of the bottle will be brilliantly colored, wavy, and irregular."

Besides the polariscope, Armstrong's salesmen are introduced to many other modern testing devices. As part of their extensive and periodic training program, they see the section ring test for glass distribution, the thermal shock, chemical durability, and the many other exacting tests which make sure you get only top quality Armstrong's glass.

This factory experience, besides supplying our salesmen with practical facts and figures about the production of glass and closures, helps them to do a better, more intelligent job of servicing your needs. Get full information on any of Armstrong's glass or closures from your Armstrong representative, or write direct to Armstrong Cork Co., Glass and Closure Division, 5908 Prince St., Lancaster, Pa.



ALL DRESSED UP AND READY TO GO

Your package or container has a job to do —taking your product to the market. That's why you want it all dressed up—in its best bib and tucker—to help meet competition. That's why you depend on colorful PALM FECHTELER decals to do a handsome dressup job quickly and economically.

Quickly—because PALM FECHTELER decals are made for speedy identity (without obscuring the contents of transparent containers). They are easily applied in your own plant as a part of production. No skilled labor is required.

Economically—because PALM FECHTELER decals are inexpensive, colorful and stay put on glass, ceramic and plastic surfaces. They are soil-proof, scuff-proof and alcohol-proof. They give individuality to the simplest, standardized container, thus reducing the need for a large or varied stock inventory.

PALM FECHTELER decals are produced to meet your package or container requirements—in any design or color. A trained staff of skilled artists is at your service to create your individual design. Complete line of decals for trucks, show cases, doors, windows or any spot that meets the eye. Samples and information on request.

PALM, FECHTELER & CO.
220 WEST 42nd STREET
NEW YORK 18, N. Y.

Creators of Quality Decalcomanias since 1856

COMPLETE RANGE of MATERIALS FOR A COMPLETE PACKAGING SERVICE

PAPERBOARD
PAPER
HEAT-SEALING COATED MATERIALS
TRANSPARENT FILM
ALUMINUM FOIL
LAMINATED AND COATED GLASSINE
WAXED PAPER
LAMINATED PAPER
LAMINATED PAPERBOARD

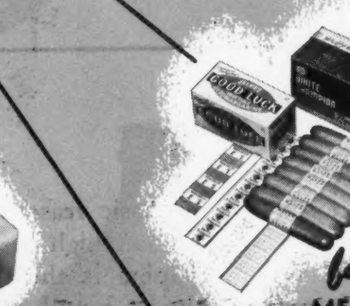
for BAKED GOODS

for ICE CREAM and BUTTER

for DRIED FOODS

for PROCESS CHEESE

for PRE-MIXED FOODS



for CONFECTION and TOBACC

for MEAT PRODUCTS

for FROZEN FOODS

The diversified materials from which Marathon packages are fabricated assure a package "built for the job." In the hands of Marathon's skilled technical staff, with the efficiencies of integrated production, these materials give Marathon package development a unique and definite advantage.

MARATHON CORPORATION
Menasha, Wisconsin

MARATHON

Near Crisis at Oxford Paper Company by Tony Barlow

TREMENDOUS SUSPENSE! A FOURTH GENERATION OXFORDITE, FOR A SPLIT SECOND, ALMOST SHOWS INTEREST IN SOMETHING BESIDES FINE QUALITY PAPER.

ONE of the basic reasons for the consistent high quality of Oxford Papers is the long ingrained "know-how" of its papermakers.

In many cases there are three generations of the same family line at Oxford. Two generations of the same family are not unusual. Veteran papermakers who have spent their whole lives at Oxford are numerous.

This fine craftsmanship is in addition to Oxford's extensive papermaking facilities—in addition to Oxford's convenient and plentiful supplies of pulpwood—in addition to *complete* control over all the production processes from start to finish.

Also contributing to Oxford quality is never-ending research, which meets current papermaking problems as they arise and continues to advance the papermaking art.

Behind all this is Oxford's half century of background—its many years of producing over 1,000 miles of quality paper a day.

So for quality printing papers, why not come to quality paper headquarters — Oxford. Consult your Oxford merchant.

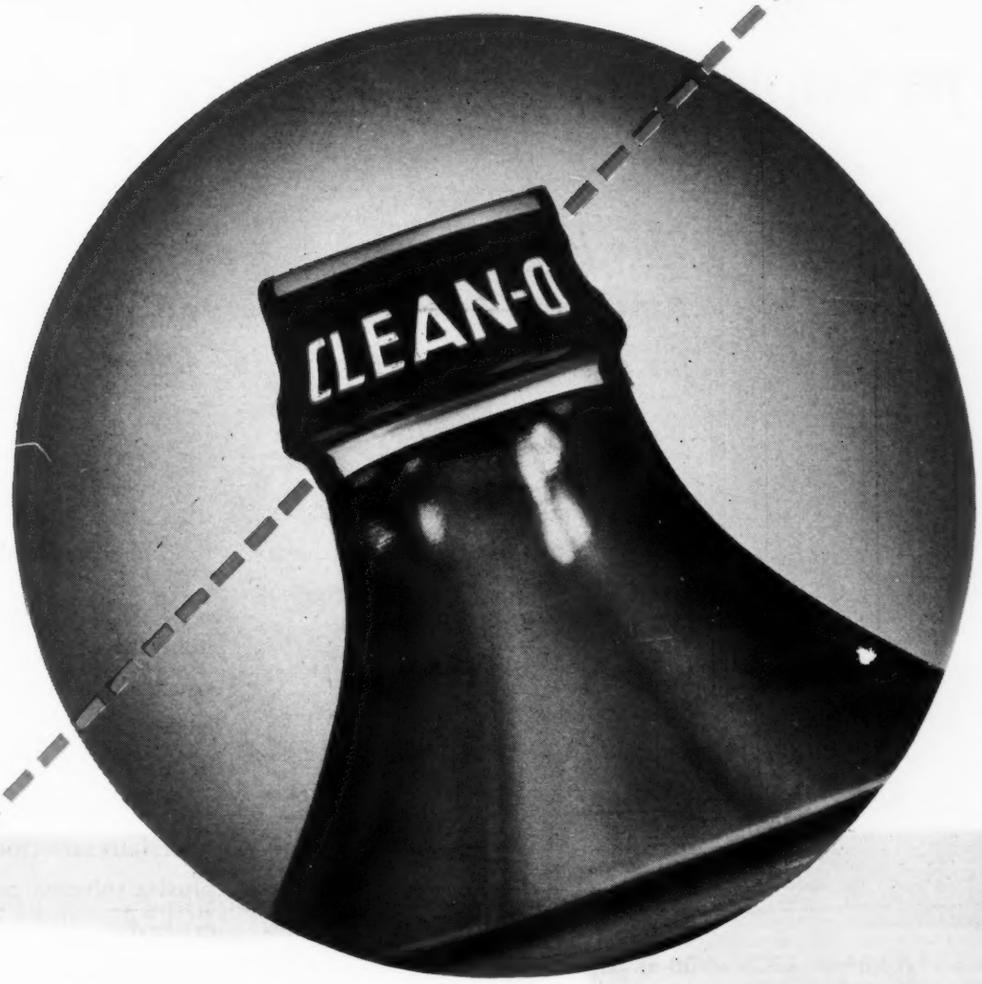
Included in Oxford's line of quality printing and label papers are: ENAMEL-COATED—Polar Superfine, Maineflex, Mainefold, White Seal and Rumford Litho C1S; UNCOATED—Engravatone, Carfax, Aquaset Offset, Duplex Label and Oxford Super, English Finish and Antique.

OXFORD PAPER COMPANY

230 PARK AVENUE, NEW YORK 17, N. Y.

MILLS at Rumford, Maine and West Carrollton, Ohio — *WESTERN SALES OFFICE: 35 East Wacker Drive, Chicago 1, Ill.* — *DISTRIBUTORS in 48 Key Cities*

Offering Premiums?



Another Reason for

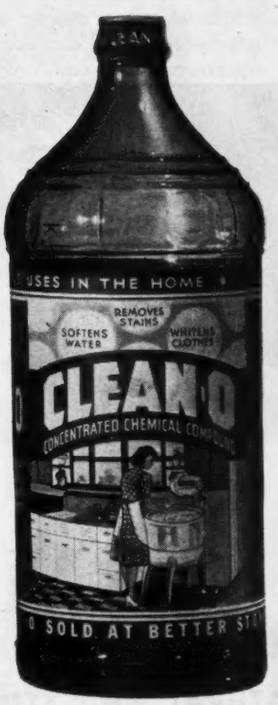
CEL-O-SEAL

REG. U. S. PAT. OFF.

Here's a handy exchange medium for the premium offers that are so attractive to housewives. The purchaser of Clean-O simply saves the Du Pont "Cel-O-Seal" band. It makes a safe exchange token because "Cel-O-Seal" bands can't be illegally duplicated.

These colorful bands not only provide valuable advertising space . . . but also reliable protection against leakage, contamination and tampering. It will pay you to investigate their all-round benefits.

"Cel-O-Seal" cellulose bands are manufactured by E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Del. Also sold by Armstrong Cork Co., Lancaster, Pa., and I. F. Schnier Co., San Francisco, Cal.



DU PONT "CEL-O-SEAL" BANDS

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

★

Do you want to make a *better product* at a *lower cost?*

Then look into

American Anode latices and mixes

for coating and impregnating paper . . .

Without question, during the next few years the most important technical advances in the coating and impregnating of paper will be made possible by the use of American Anode latices and water mixes—*if* you will let us work with you on established products as well as new developments.

There has been so much recent progress in this field that it's doubtful if paper chemists and engineers have been able, in these busy days, to keep abreast of it.

There's ample evidence that in many cases we will be able to help you make a *better* product at a *lower* cost. Certainly, manufacturing will be simplified because water systems are inherently uncomplicated. They're materially safer, too; no dangerous explosive solvents; no cumbersome and expensive solvent recovery systems.

Latices and mixes of natural and synthetic rubbers, GEON, HYCAR, neoprene, and Saran are available from our bulk storage. For more information about the *modern* way to coat and impregnate paper, please write Department AC-8, American Anode, Inc., 60 Cherry St., Akron, O.

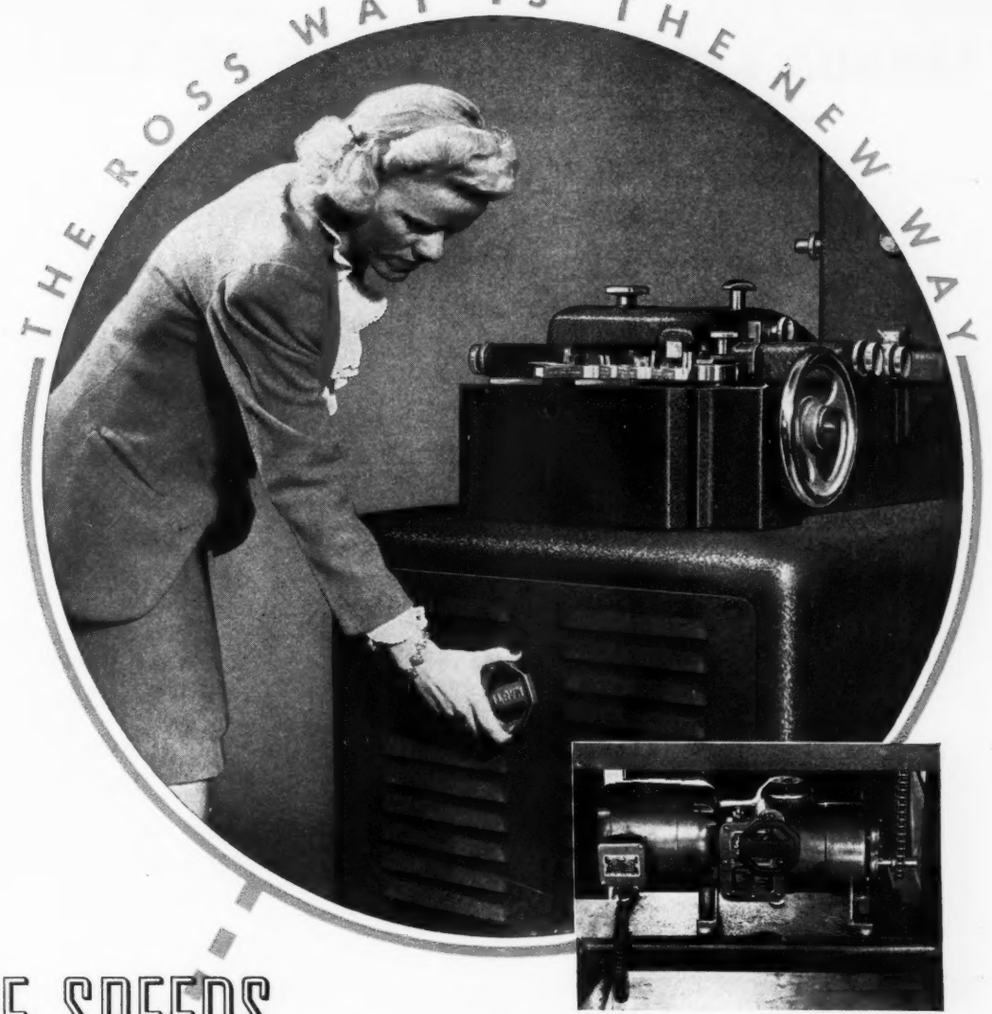
The American Anode laboratory in Akron is equipped with the latest and most modern paper testing equipment, and is staffed with people who know how to use it.

AMERICAN ANODE

INCORPORATED

NATURAL AND SYNTHETIC RUBBER LATICES, WATER CEMENTS AND SUSPENSIONS

THE ROSS WAY IS THE NEW WAY



VARIABLE SPEEDS . . .

PAT. APPLIED FOR

An outstanding feature of the ROSS machine is its quick adjustability for various speeds. This is done through a master Speedranger. We illustrate an exposed view of the master Speedranger drive. Note absence of trouble-giving cam lever and crank movement. No oiling required except on drive, which only requires attention once in every 1000 hours. This machine is fully automatic for setting up and tucking one end of folding carton.

The same features are available on the ROSS fully automatic machine *(loading and closing both ends of either tuck or sealed carton).*

PRECISION PARTS • SELF OILING • DIAL CONTROL
VERSATILE ADJUSTABILITY • MASTER SPEEDRANGER

A. H. ROSS and Co.

PACKAGING MACHINERY

A SUBSIDIARY OF THE ROCKWELL MANUFACTURING COMPANY

LUDLOW KENTUCKY

LESSON 1 FROM THE SALES PRIMER:

Packaging for Profit

A Women buy ¾ of all the goods sold at retail.

B Women make ¾ of their buying decisions at the point-of-sale—which means that they decide *what brand to buy* when they are in the stores shopping. (*Confirmed by national retail surveys.*)

C Great merchandising organizations exploit that fact. They know that to women, shopping is "*looking*" . . . that *appearances* mean much to them. So they always give preferential display (other things being equal) to products that come in the best looking packages!

MORAL:

Never underestimate the power of the package! The package that attracts the eye, arouses interest—and makes a better impression of *quality within*—WINS SALES!

LET RITCHIE WORK WITH YOU to develop a better package at low unit cost. One that will instantly identify, fully protect and conveniently dispense your product—practical—production-planned—easy to fill or pack—to handle, to stack and display—but above *all* designed for eye-appeal, for quality impression—A PACKAGE THAT SELLS!

Never the Power

COPYRIGHT 1945, W. C. RITCHIE & CO.

W.C. Ritchie and COMPANY

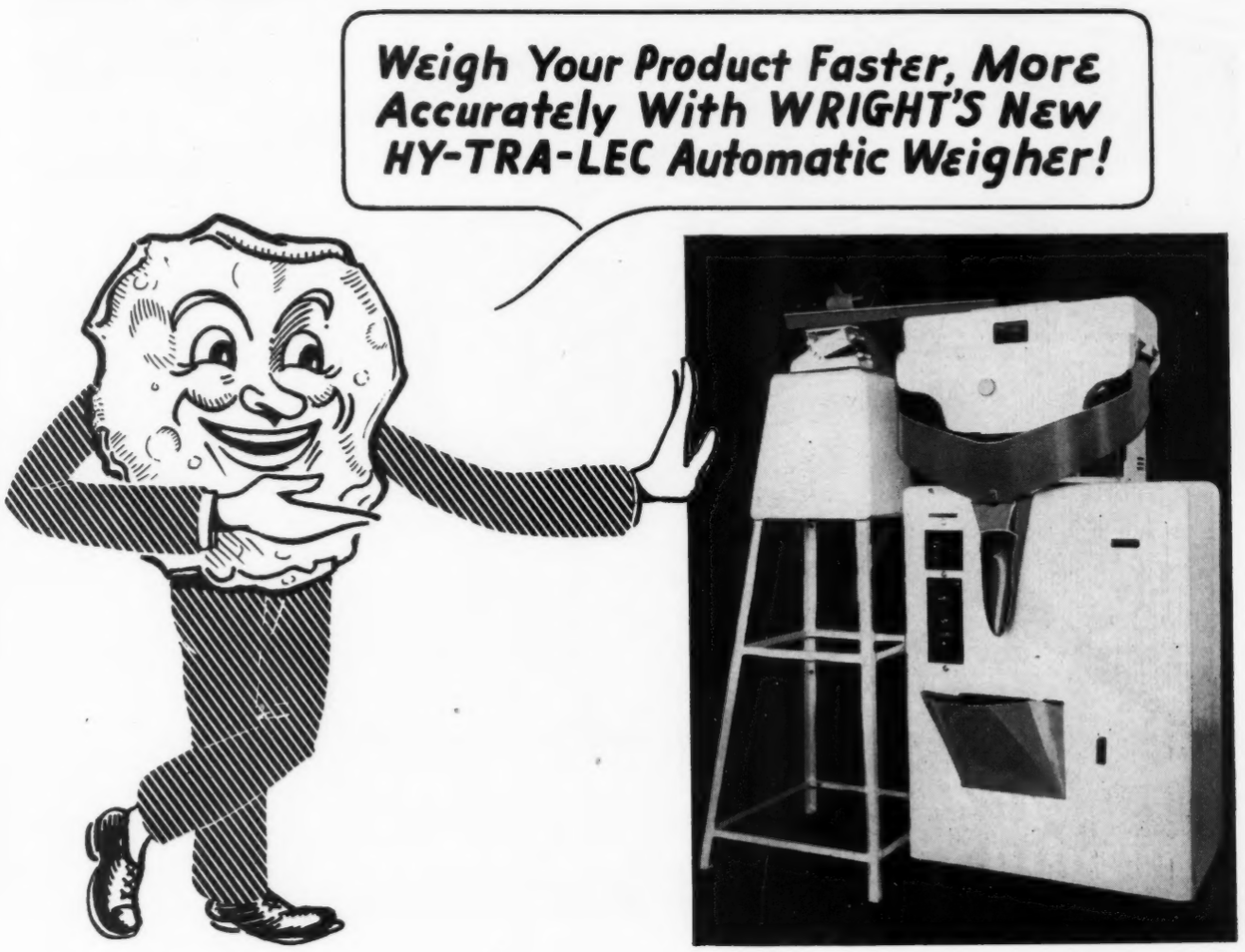
8047 Baltimore Avenue • Chicago 17

★ SET-UP PAPER BOXES
★ FIBRE CANS
★ TRANSPARENT PACKAGES

Underestimate of the Package!

NEW YORK • DETROIT • LOS ANGELES • ST. LOUIS • MINNEAPOLIS • MILWAUKEE • ATLANTA • NEW ORLEANS • DENVER • PORTLAND • SEATTLE • MIAMI

Take A Tip From A Potato Chip . . .



Gordon Foods Tested One...Bought 14!

Potato chips are among the most difficult products to handle. But this new Wright machine automatically weighs them with an accuracy and speed previously unattainable with a single weighing unit.

GORDON FOODS of Atlanta tested one . . . bought 14! Similar enthusiastic reports are coming from leading food manufacturers everywhere.

A new method of weighing is used. It's called Hy-Tra-Lec. The model illustrated was designed specifically for weighing potato chips and like products.

Other models will weigh a wide variety of products, both free flowing and non-free flowing, in charges at pre-determined net weights ranging from 1/8 of an ounce to one pound.

Your packaging and production chiefs are invited to observe test runs on your own products. Check for yourself. Use your own figures. See how quickly this new method of weighing will pay for itself in your plant.

Literature is available. Don't wait to hear about Wright's new Hy-Tra-Lec weighers from competition. Investigate now.

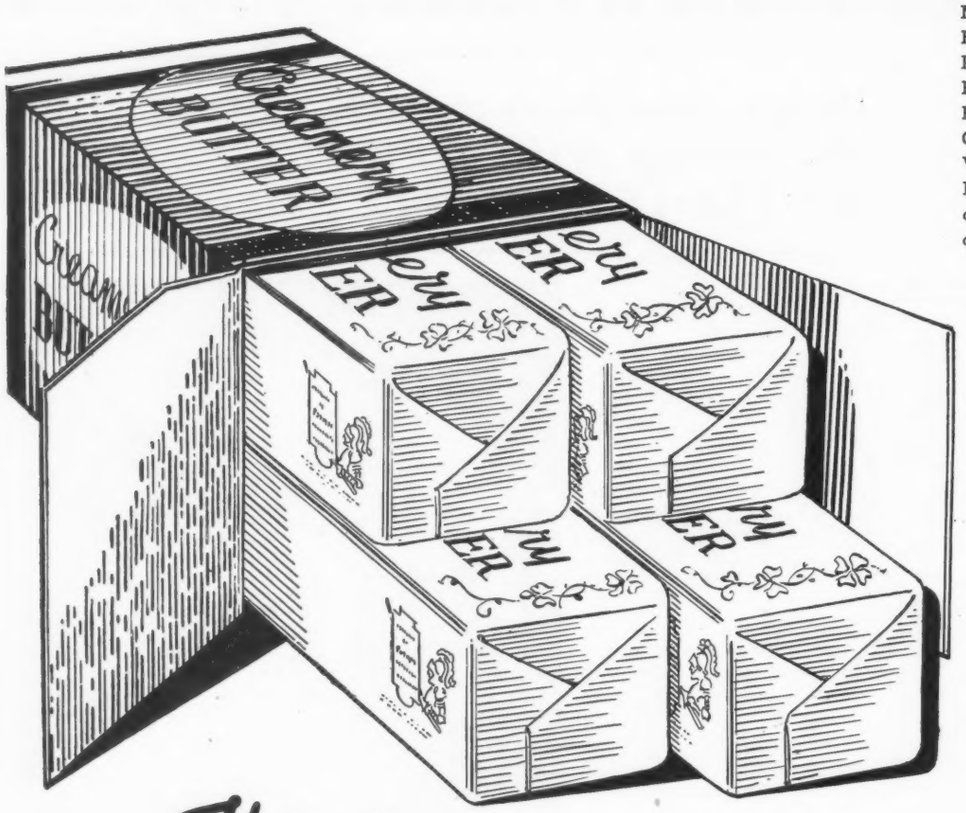
WRIGHT'S Automatic Machinery Company ★

DURHAM, NORTH CAROLINA

"Pioneers Since 1893 In Automatic Packaging Machinery"

Use Patapar for:

Food wrappers
Milk can gaskets
Bottle hoods
Pie doilies
Box and crate liners
Bulk packaging units
Can liners
Vitamin capsule trays
Deep freeze wraps
and hundreds
of other uses



This is your keymark

Protected by Patapar Vegetable Parchment

The Patapar keymark is the nationally advertised symbol of wrapper protection. It was designed to be used on your printed Patapar wrappers as a way to tell customers your product is well protected. We'll include the keymark on your printed Patapar at no extra cost.

. . . with Patapar you get complete wrapper printing service

Patapar* Vegetable Parchment can be beautifully printed in bright colors and designs. We do the printing for you in our own plants which are completely equipped for printing Patapar by letterpress or offset lithography. We'll print your Patapar in one color or several colors. We'll create designs for you, make sketches, suggest color combinations. We'll take care of every detail right up to the delivered job.

And remember, when you use Patapar you are using the best protective wrapper money can buy. It's got wet-strength. It's boil-proof, grease-resisting, odorless, tasteless.

*Reg. U. S. Pat. Off.

Paterson Parchment Paper Company • Bristol, Pennsylvania

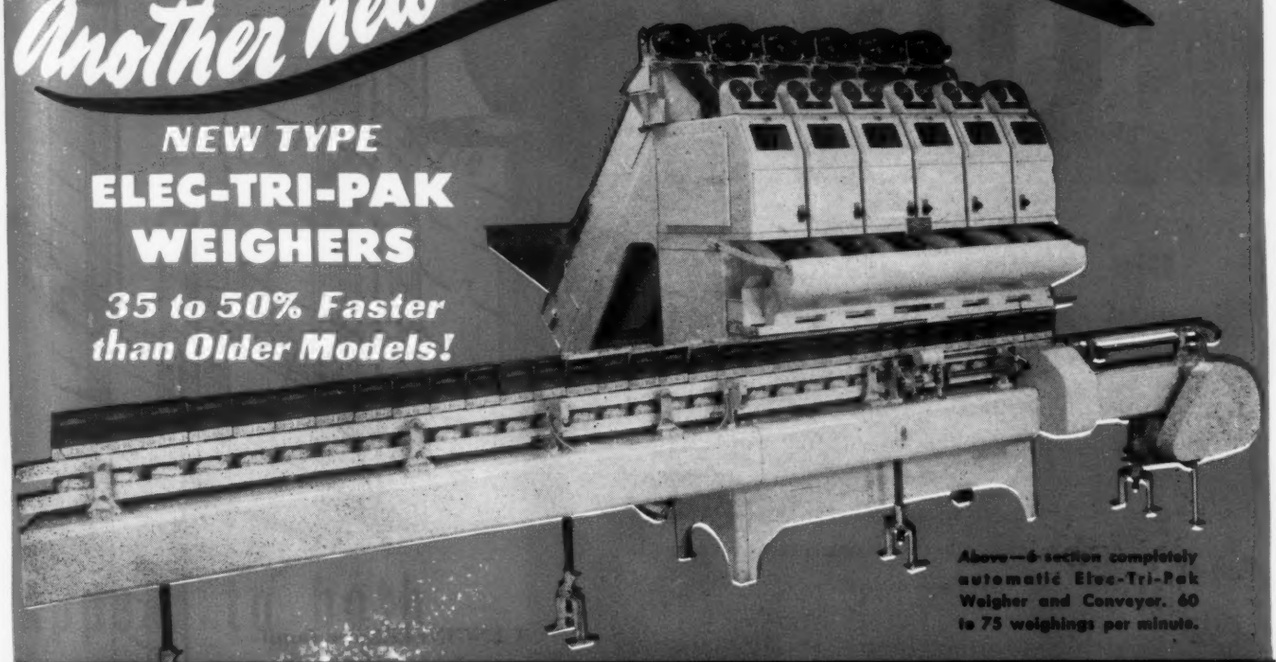
Headquarters for Vegetable Parchment Since 1885

WEST COAST PLANT: 340 BRYANT STREET, SAN FRANCISCO 7, CALIFORNIA
BRANCH OFFICES: 120 BROADWAY, NEW YORK 5, N. Y. • 111 WEST WASHINGTON ST., CHICAGO 2, ILL.

Another new Triangle Development

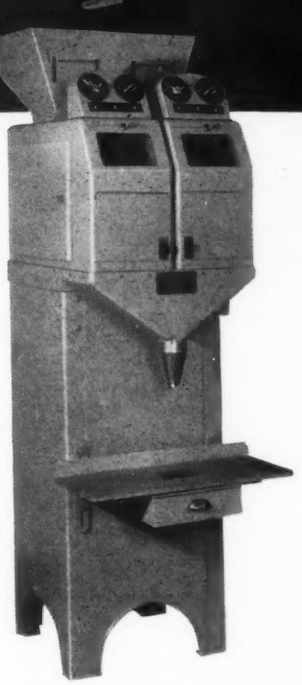
NEW TYPE ELEC-TRI-PAK WEIGHERS

35 to 50% Faster than Older Models!



Above—6-section completely automatic Elec-Tri-Pak Weigher and Conveyor. 60 to 75 weighings per minute.

for Faster, Lower Cost Labor-Saving Packaging!



Above—2-section semi-automatic weigher. Sets the pace for the operator. 20 to 30 per minute. Built in multiples of 1-2-3-4 or more units.

HERE'S the newest thing in modern, high speed, precision machines for weighing and filling dry products into any style container. Available in automatic and semi-automatic models for handling cookies, crackers, coffee, candies, macaroni products, beans, peas, rice, potato chips, marshmallows, cranberries, dried fruits and a host of other items.

Electrically vibrated feed plates discharge product into power-rotated weigh buckets which dump into container when a predetermined weight is reached. Production 12 to 15 packages per minute *per section.* Easily adjustable, remarkably accurate, handles products without breakage. ASK FOR LITERATURE.

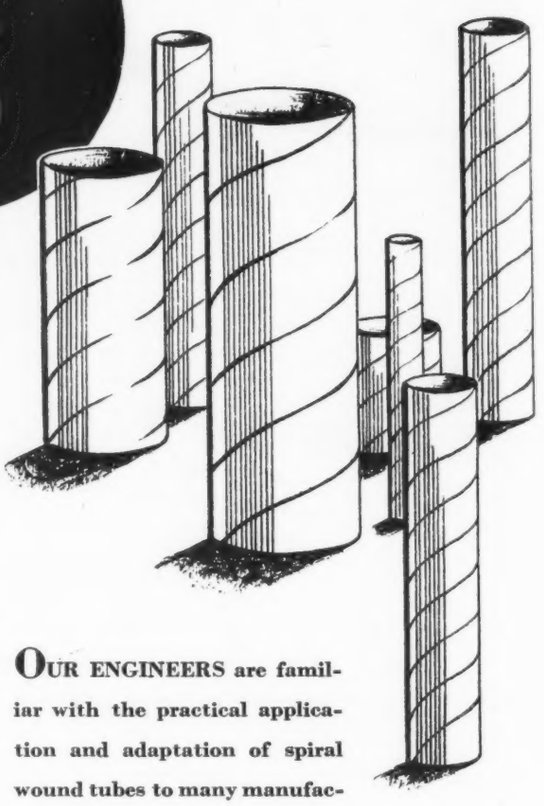
Headquarters for High Speed Precision Weighing and Filling Equipment

TRIANGLE PACKAGE MACHINERY CO.

907 NO. SPAULDING AVENUE, CHICAGO

WEIGHERS FILLERS CARTON SEALERS

Spiral Wound TUBES



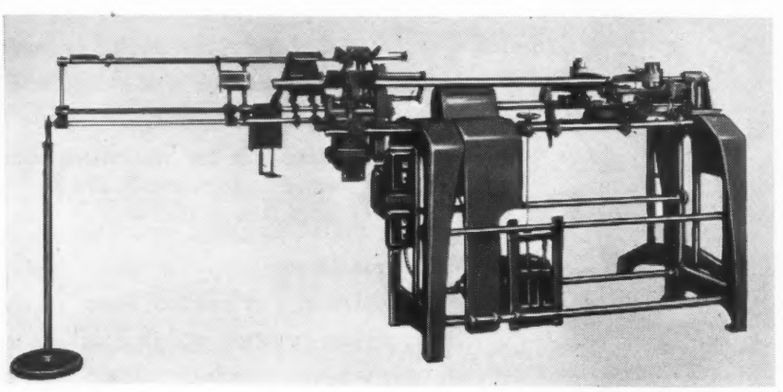
Big Aid in Packaging and Production Processes

Strong, accurate small diameter spiral wound tubes are extensively used for conduits or insulation in electrical apparatus and radio coils. They add to protection, accessibility and convenient use of cosmetics, hygienic medical and surgical supplies.

All such accurately wound small diameter tubes can be produced rapidly and economically on the Knowlton No. 77 Spiral Tube Winder.

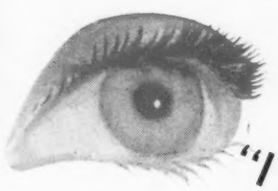
It winds 2 to 5 ply paper tubing from ¼″ to 1″ in diameter. A variable speed motor drive can be adjusted to produce 40 to 100 lineal feet per minute.

OUR ENGINEERS are familiar with the practical application and adaptation of spiral wound tubes to many manufacturing and packaging processes. Can they be of help to you?

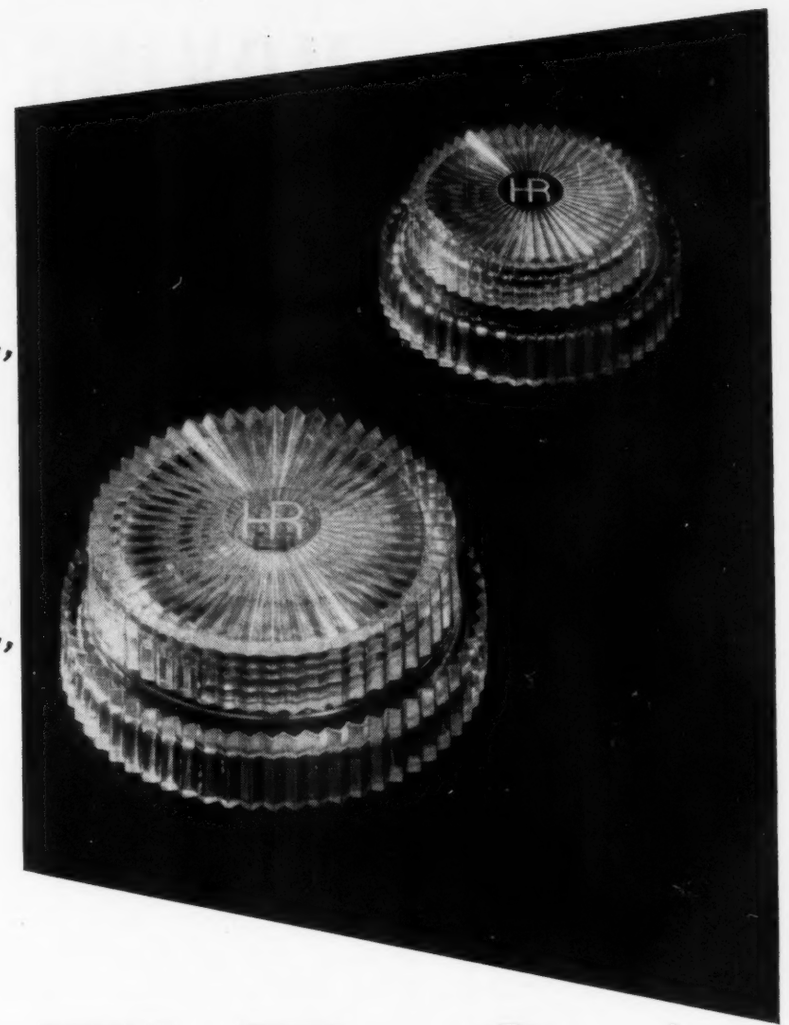


Knowlton No. 77 Spiral Tube Winder

"I seek Style"



"I seek Value"



Appeal to both with LUSTRON

One eye for style, one eye for thrift... that's the smart American shopper today.

And that's why the Helena Rubinstein rouge compact... of Monsanto's versatile Lustron... is so popular. Lustron makes it both luxurious and low in price.

If you're selling women (and 85% of all merchandise *is* sold to them!) consider the advantages of Lustron packages, package components, re-use containers:

1. Unlimited colors
2. Dimensional stability
3. Freedom from taste or odor
4. Excellent resistance to common acids, alkalies, salts, alcohols
5. Low moisture absorption
6. Light in weight and low in cost per pound
7. Molded easily in fastest, most economical modern molding techniques

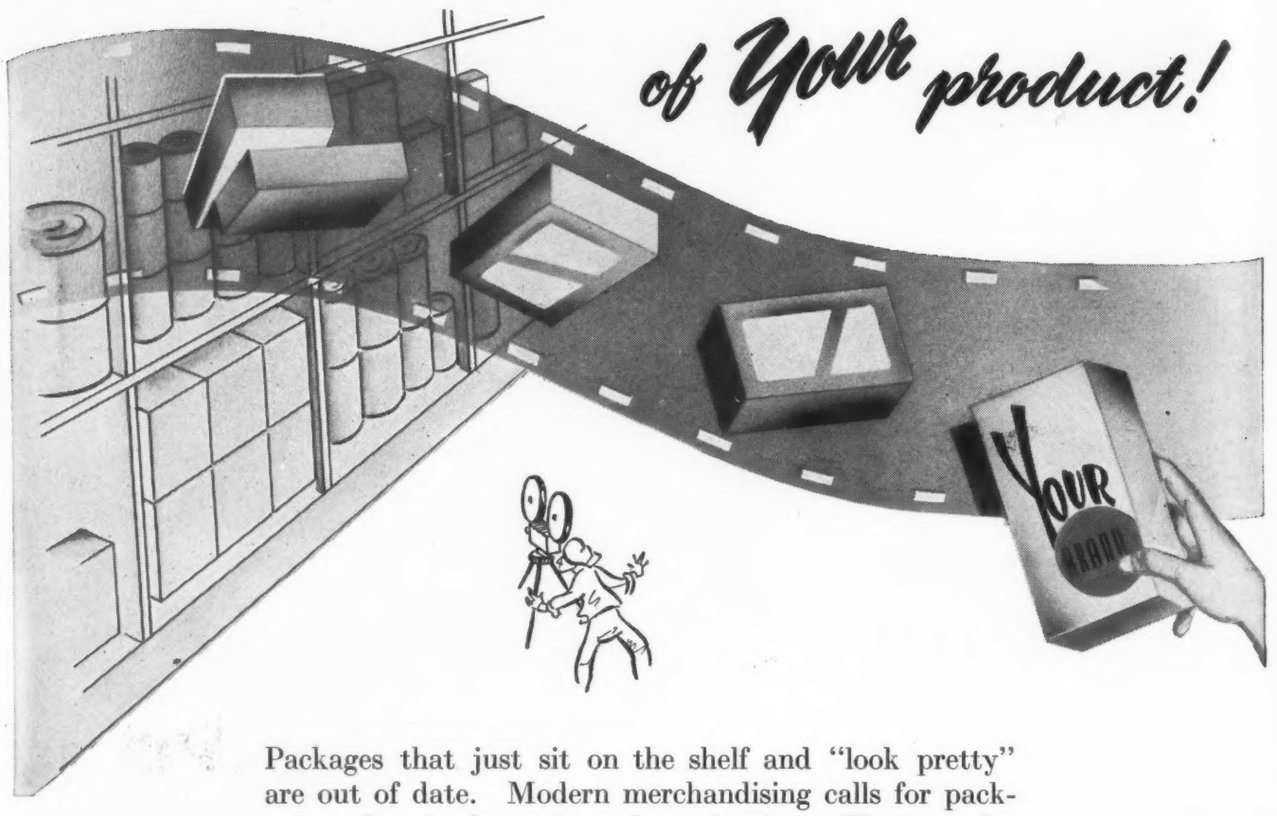
For full details on Lustron for packaging write direct today: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Massachusetts. In Canada: Monsanto Ltd., Montreal, Toronto, Vancouver.

Lustron: Reg. U. S. Pat. Off.

VUE-PAK
TRANSPARENT PACKAGING MATERIAL
TRADE MARK

MONSANTO PLASTICS
SERVING INDUSTRY... WHICH SERVES MANKIND

make a MOVING PICTURE *of Your product!*



Packages that just sit on the shelf and "look pretty" are out of date. Modern merchandising calls for packaging that is dynamic and motivating. That is why ROSSOTTI designs labels and cartons to make a "moving picture" of your products—from shelf to shopping basket to consumers' homes.

The ROSSOTTI organization leaves nothing to chance. We find out what all your competitors are doing. Special tests are made by experts in our research kitchen. These reveal important nutritional, serving and sales features of your products. We do all of the color printing in our large well-equipped plant—even grinding our own colors—to insure perfect printing results.

The specialized skills of our staff members are at your service. Get in touch with our nearest branch. Find out how ROSSOTTI can make a "moving picture" of your products.

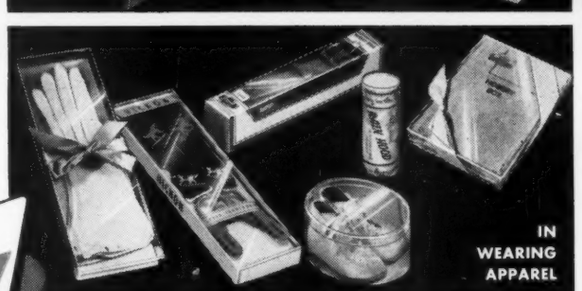
Rossotti
SINCE 1898

ROSSOTTI LITHOGRAPHING CO., INC. • NORTH BERGEN, N. J.

BOSTON 9, Mass.: 200 Milk Street • ROCHESTER 4, N. Y.: 183 Main Street, East
JACKSONVILLE 2, Fla.: 1106 Barnett National Bank Building • Chicago 11, Ill.: 520 North Michigan Avenue
ROSSOTTI WEST COAST LITHOGRAPHING CORP., 5700 Third Street, San Francisco 24, Cal.

No Question about it...

80% of ALL consumer purchases are made or influenced by women! Is your product "dressed" for its date with these keepers of America's purse strings?



Send us a sample of your product and let our Package Planning Group custom-design a transparent, plastic Showbox to show it at its best.

SHOWBOX

DIVISION OF

CENTRAL STATES PAPER & BAG CO.

2600 N. Broadway, St. Louis 6, Missouri, U. S. A.

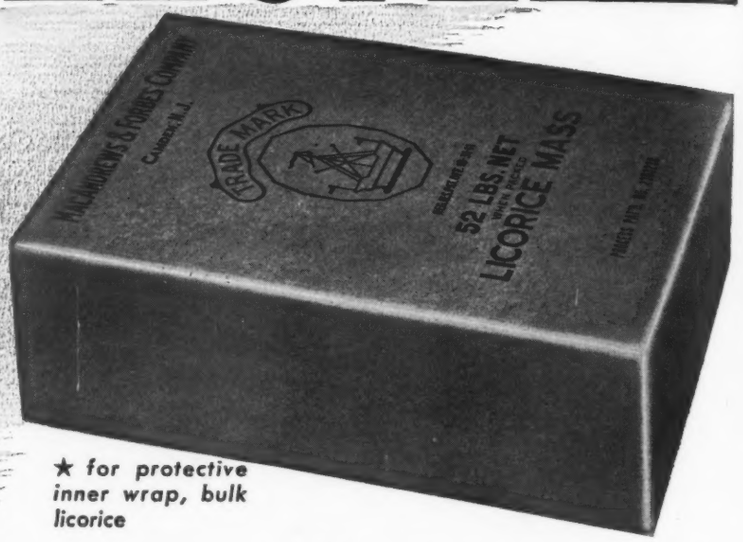
CHICAGO
520 N. Michigan Ave.

NEW YORK
489 Fifth Avenue

DETROIT
1951 East Ferry St.

FUNCTIONAL

*Uses** OF RIEGEL'S DIAFANE



★ *for protective inner wrap, bulk licorice*

★ *for laminated inner lining*

★ *for pressure sensitive backing*

Riegel's Diafane is widely used in the baking industry due to its combination of low-cost transparency and high moisture protection. But there are many other important fields where the functional qualities of Diafane have solved difficult problems . . . and where transparency is not even a factor.

The successful new Sealright Frozen Food Container . . . simple as "A-B-C" to fill — has a laminated inner surface of Diafane to protect flavor and check moisture-vapor loss.

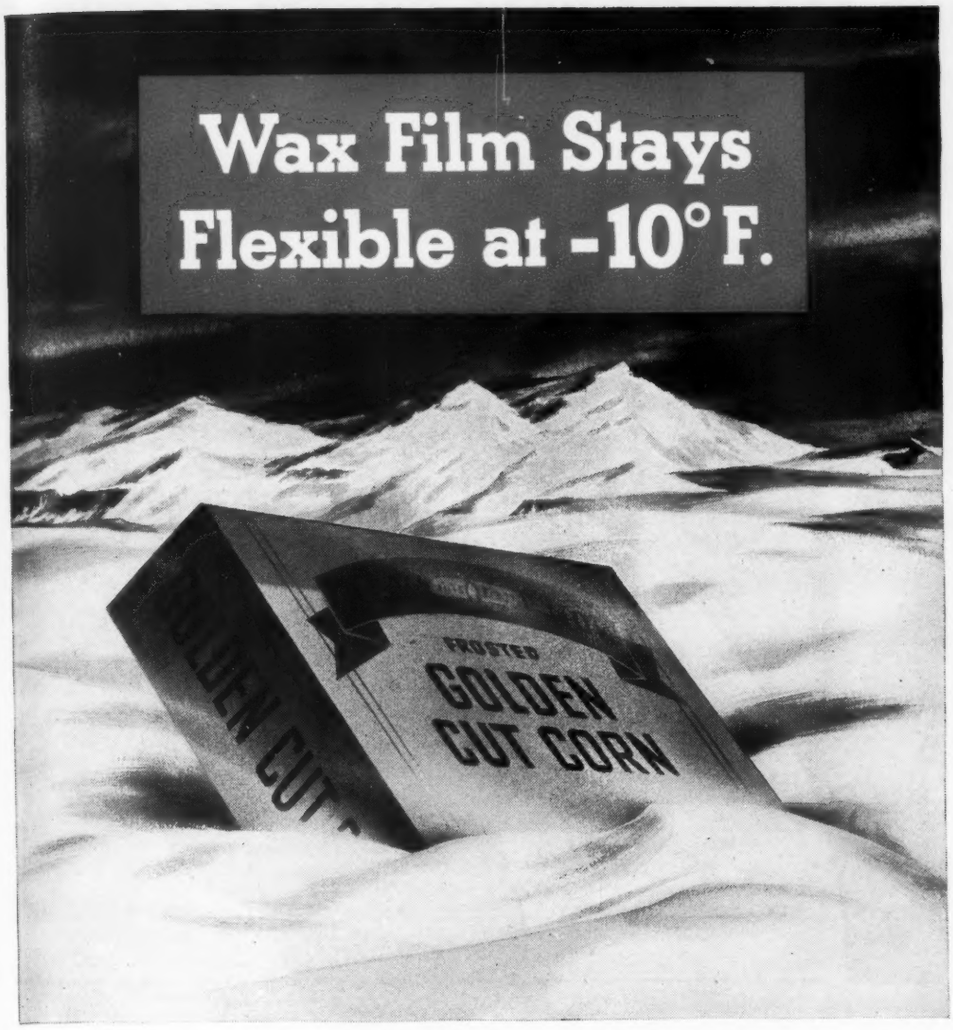
Oil change tags and advertising signs of every description are printed on Riegel Bristols, with a pressure sensitive backing guarded by an easy-to-peel-off sheet of Diafane.

Licorice in bulk also relies upon Diafane for protection and quick removal of wrapper . . . and so it goes in many other fields where the use of Riegel's Diafane rests on the sound economic base of proven functional value.

RIEGEL*PAPERS

FOR FUNCTIONAL PACKAGING

RIEGEL PAPER CORPORATION • 342 MADISON AVE. • NEW YORK 17, N. Y.



Special Socony-Vacuum Products Won't Chip or Flake in Frozen Food Packaging!

To keep frozen foods fresh, you need tough, durable wax films that keep moisture *in*.

Most important, these films must remain flexible at the low temperatures encountered—minus 10° F. They must not chip or flake off to break the seal.

S/V Product 2300 Series waxes, blended with paraffin waxes, meet this special requirement for coating paper, paperboard and glassine used in packaging frozen foods. They're available now in volume for immediate deliveries to your plant.

Ask your Socony-Vacuum Representative about these waxes and about other petroleum products for packaging. He'll give you detailed facts and help you apply them to your specific requirements.

Process Products
SOCONY-VACUUM

INVESTIGATE
SOCONY-VACUUM PROCESS PRODUCTS
Research and Service

What's New in Petroleum for PACKAGING!

FROZEN FOODS
S/V Microcrystalline Waxes
Impart flexible moisture-vapor proof coatings.

★

DEHYDRATED FOODS
S/V Microcrystalline Waxes
When used as coatings, keep contents dry.

★

CONTAINER LININGS
S/V Microcrystalline Waxes
Protect interiors of barrels, drums, tank cars.

★

BEER CANS
S/V Petrosenes
Give flexible inert linings.

★

HEAT-SEALING
Special Waxes
Produce tough, tenacious seals on paper.

★

EXPLOSIVES
S/V Waxes, Petrolatums
Waterproof and seal dynamite sticks.

★

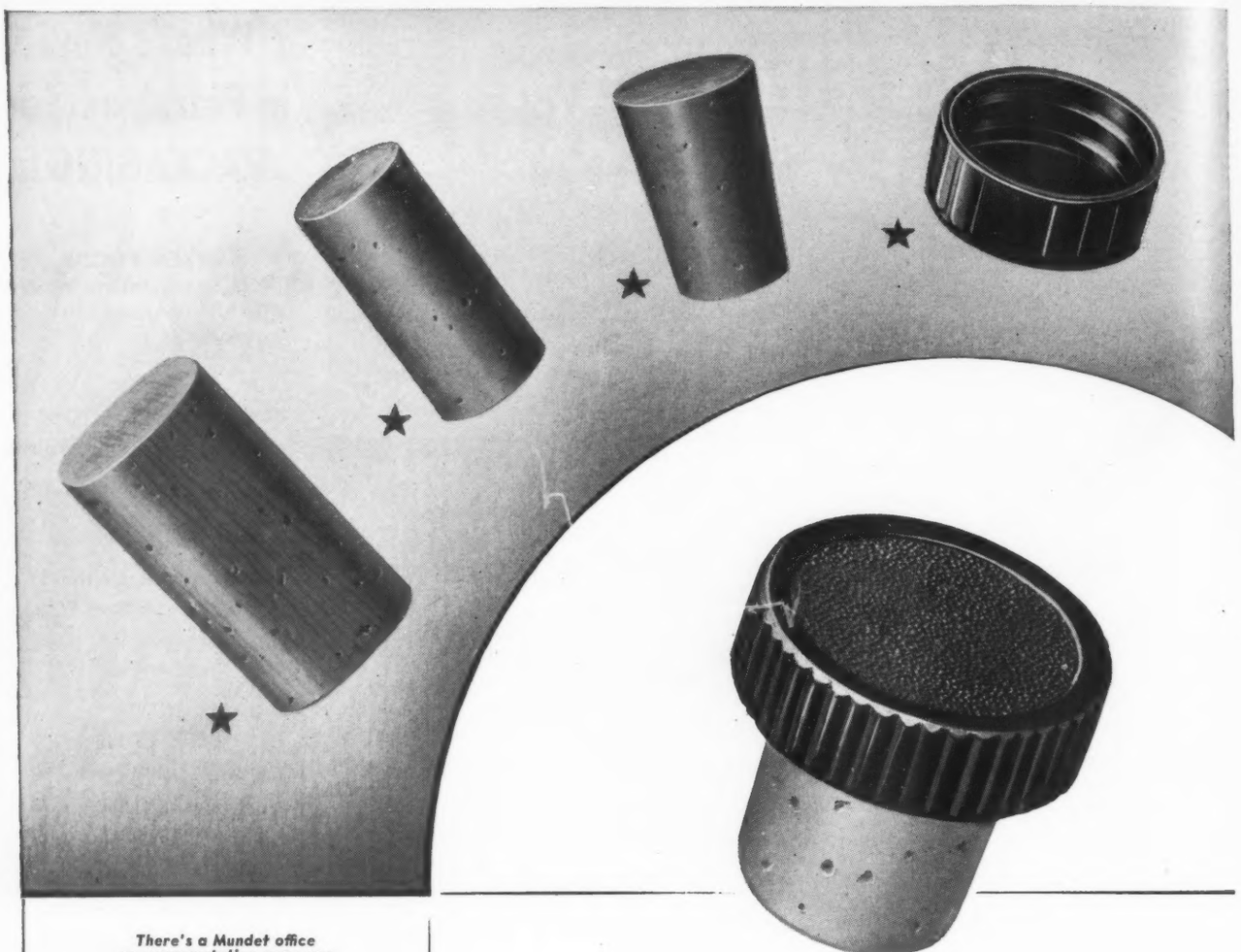
HYDROFLUORIC ACID
S/V Cerese Waxes
Add strength to waxes used for containers.

★

RUST PREVENTIVES
S/V Sova Kotes
Keep metals from rusting in storage.

SOCONY-VACUUM OIL CO., INC.
26 Broadway, New York 4, N. Y.,
and Affiliates:
Magnolia Petroleum Company,
General Petroleum Corporation.

SAFE-SEAL YOUR PRODUCTS WITH MUNDET CLOSURES



There's a Mundet office or representative near you

ATLANTA
339-41 Elizabeth Street, N. E.
BROOKLYN 11
65 South Eleventh Street
CHICAGO 21
135 West 63rd Street
CINCINNATI 2
427 West 4th Street
DALLAS 1
505 Southland Annex
DENVER
The Stone-Hall Co.
DETROIT 26
335 West Jefferson Avenue
HOUSTON 1
Commerce and Palmer Streets
JACKSONVILLE 7, FLA.
1212 Mary Street
KANSAS CITY 7, MO.
1428 St. Louis Avenue
LOS ANGELES 31
1850 North Main Street
LOUISVILLE 22
1418 Heyburn Bldg.
NEW ORLEANS 16
315-325 N. Front St.
PHILADELPHIA 39
856 N. 48th Street
ST. LOUIS 4
2415 South Third Street
SAN FRANCISCO
440 Brannan Street
J. C. Millett Co.
118-32 Sacramento Street

In Canada:
Mundet Cork & Insulation, Ltd.
35 Booth Avenue, Toronto

UNIFORMITY of size and shape is an important advantage of Mundet machine-made Corks. Where earlier hand-made stoppers had variations in cutting and trimming, the modern Mundet Cork is duplicated faithfully in million lots. Cork is Mundet's specialized business. The safe-sealing of Mundet Corks is assured thru experienced selection of the raw material, expert grading and processing. After selection of the best grades for stoppers, the finished corks are checked by sorters, carefully trained in this work, in a final grading of cork quality. Mundet Corks remain lively and resilient, do not "set" or crumble. They safe-seal your product's distinguishing quality. Mundet Cork Corporation, Closure Division, 65 S. Eleventh Street, Brooklyn, 11, N. Y.

MUNDET CLOSURES

Complete

. . . as in Betner Packaging Service

All parts present. Nothing's missing from the packaging-service picture on view at Betner.

At your service, all or part: Men who know the service conditions a bag must meet; artists gifted at making a bag an indoor billboard; printing presses; bag-making equipment.

Plus, now, Benco bag-loading-and-sealing machinery, installed by Betner in *your* plant. The latest Betner service, the latest in "load-and-seal."

Inquiries invited—by mail, phone or wire. No obligation, naturally; mighty glad to have 'em.

Benj C Betner Co DEVON, PA.

BENJ C BETNER CO OF CALIFORNIA, LOS ANGELES, CAL.

New Age of Air Freight Emphasizes Importance of Protective Packaging

Your responsibility for safe arrival of fresh food products, whether lobsters in prime seacoast condition or luscious field-ripened strawberries, is greater today than ever before because shipment of fresh foods BY AIR places additional emphasis on protective packaging. AQUASTOP for bulk shipments of fresh foods by air or ground transportation combines a number of advantages unique in a packaging material.

Very light containers may be used with AQUASTOP because this material is tough, flexible, durable and remains waterproof indefinitely.

Permeable to "dry ice" gas emanations, but impermeable to water from water-ice, AQUASTOP is safe at sea level or for altitude flying, protecting contents which it encloses without damage to other units in the same load.

AQUASTOP is heat sealable, easy to use, practical and profitable.

AQUASTOP advisory service is complete. You are invited to use it without obligation. Prompt consideration will be given to your inquiry.

TECHNICAL DATA

No cracking

No tackiness

No flow

No loss of flexibility

The seal is as strong as the material itself.

Retains waterproofness

Permeable to CO_2

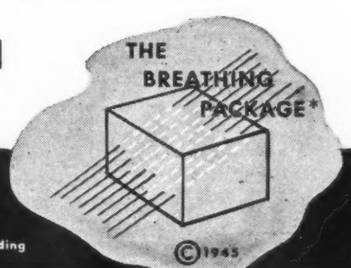
Impermeable to water

Withstands minimum hydrostatic pressure of 40 lbs. per sq. in.

PROTECTIVE COATINGS CORPORATION

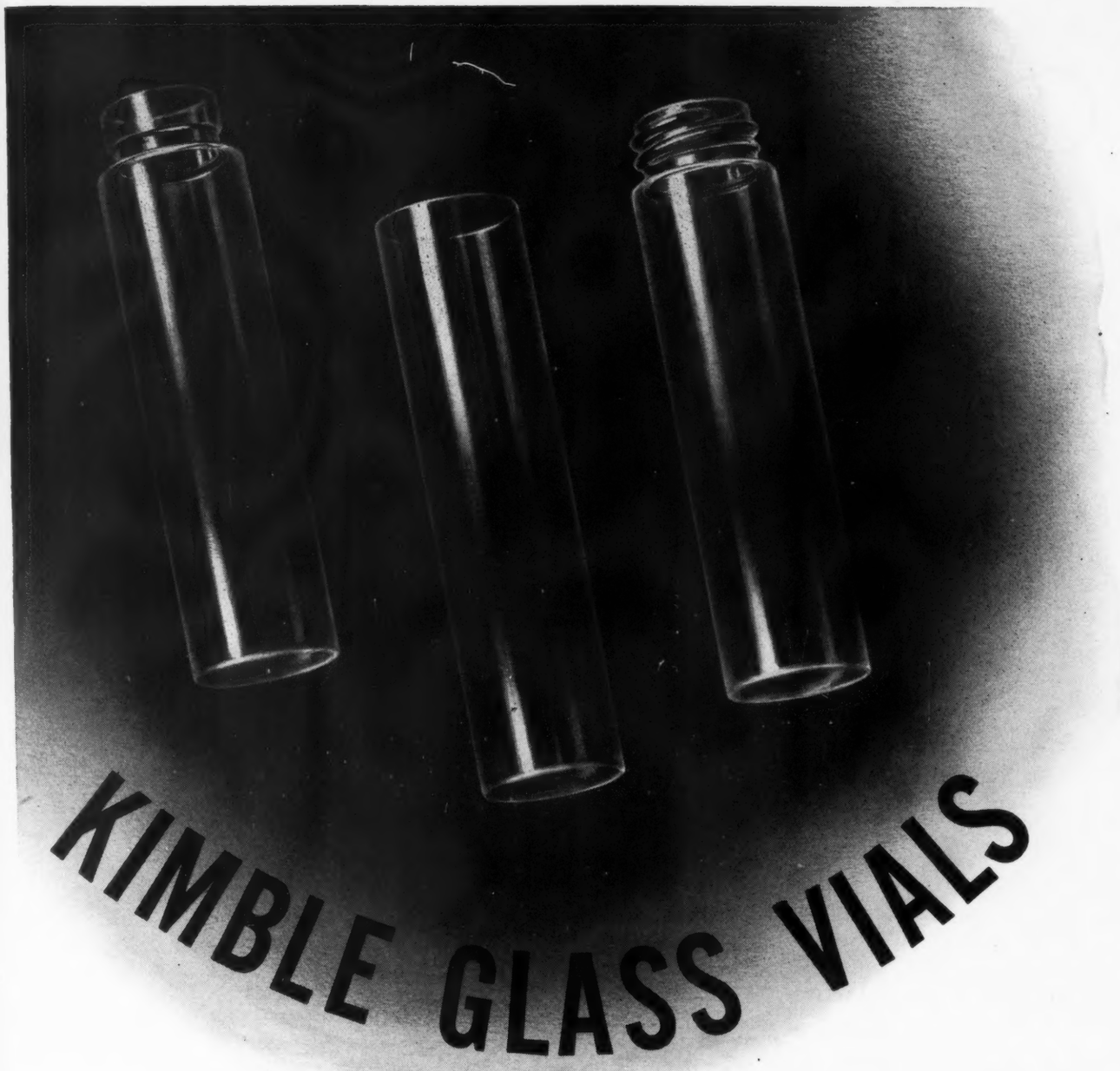
Manufacturers and Consultants

681 Main Street • Belleville 9, N. J.



AQUASTOP

*Pat. Pending



KIMBLE GLASS VIALS

in a full range of sizes, adaptable to a wide variety of closures.

For Assurance

• • • *The Visible Guarantee of Invisible Quality* • • •

KIMBLE GLASS COMPANY . . . VINELAND, N. J.

NEW YORK • CHICAGO • PHILADELPHIA • DETROIT • BOSTON • INDIANAPOLIS • SAN FRANCISCO

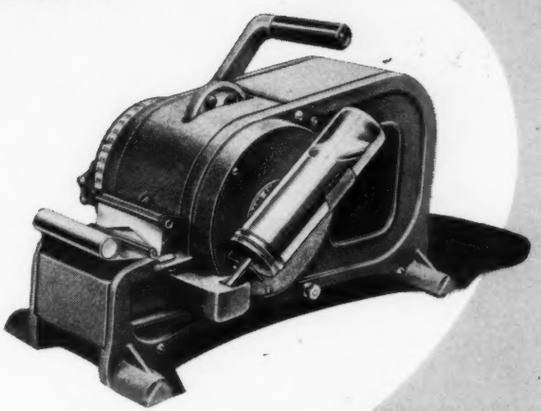
West Carrollton GENUINE VEGETABLE Parchment

From churn to table—Butter is just one of scores of products for which West Carrollton Genuine Vegetable Parchment is ideally suited, physically fit in every detail. It gives butter full-measure protection from creamery right into the hands of the consumer. Above all, it's pure, safe, odorless; it cannot change the natural sales-winning flavor of your products. It's strong, and its strength is not impaired by steam, water, grease, or frost. It's attractive, smooth, pleasant to touch. Complete printing facilities right in our own plant—printing in one or more colors with special inks for food wrappers—are at your service. These are a few reasons why so many food packers continue to use this uniformly reliable parchment, year in and year out.

WEST CARROLLTON PARCHMENT CO., WEST CARROLLTON, OHIO

A CHAMP YOU KNOW!

FOR GUMMED TAPE



TAPE SHOOTER 100

An old reliable for general shipping department use. The Tape-Shooter Model 100 has *automatic-moistening-control* and selective tape measuring device, important features for sealing containers of uniform size or constantly changing size.

Patented *Automatic-Moistening-Control* is endorsed by Gummed Industries and Association of American Railroads for safe sealing.

A CHAMP YOU'LL MEET!

FOR TACKY TAPE

BIG INCH

First tacky tape measuring dispenser ever made. It saves tape—and your money. It saves package sealing motions—and your time.

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Write for illustrations and complete specifications on these and other interesting models.

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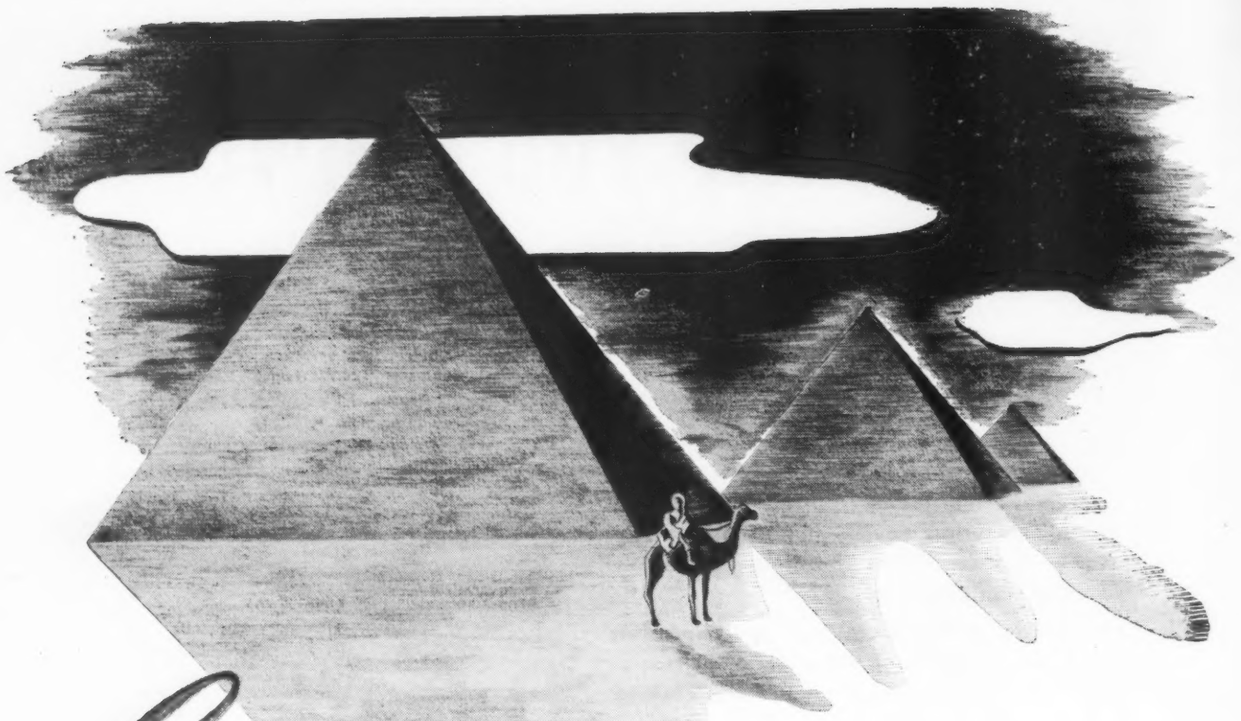

Greater THAN THE PYRAMIDS

The production of all packaged goods by American industry in just one week exceeds in bulk the Egyptian Pyramids. The paper requirements to protect, identify and promote the sale of this immense production are infinite in both volume and variety.

Nashua produces in this field, a wider range of packaging papers and utilizes a greater number of processes than does any other single paper converter.

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MODERN PACKAGING
VOLUME 19 AUGUST 1946 NUMBER 12

Does your package rate with the housewife?

What do women like—or dislike about your packages? Perhaps you know. Perhaps you don't. At any rate you may be flattered, surprised or find something to take to heart in the comments on packaging that the Grocery Manufacturers of America, Inc., have unearthed in answer to Question 23 of their "Market Basket Quiz," published September 1.

This Quiz is part of GMA's descriptive labeling program. Primarily it was to find out what women think about labels, but Question 23, the last in the questionnaire, read:

> "Are you in your kitchen? Look over your food cupboard and pick out six or eight grocery packages or cans. Examine the labels. List the names of the products and tell us what you like and what you don't like about their labels."

This question was put in, says GMA, with the thought that many women would have ideas not covered by more specific questions. They did, and how! More than a third of the 2,000 who answered the Quiz took time to go to the kitchen and examine some packages. Ninety-three per cent pointed out things they liked about the packages and 69%, things they disliked, or thought might be improved.

Since the questionnaires were sent to "opinion leaders"—homemakers, teachers, business and professional women, rural extension leaders, editors of women's magazines, newspaper columns, radio programs in all parts of the country, MODERN PACKAGING believes its readers will be interested in some of the answers.

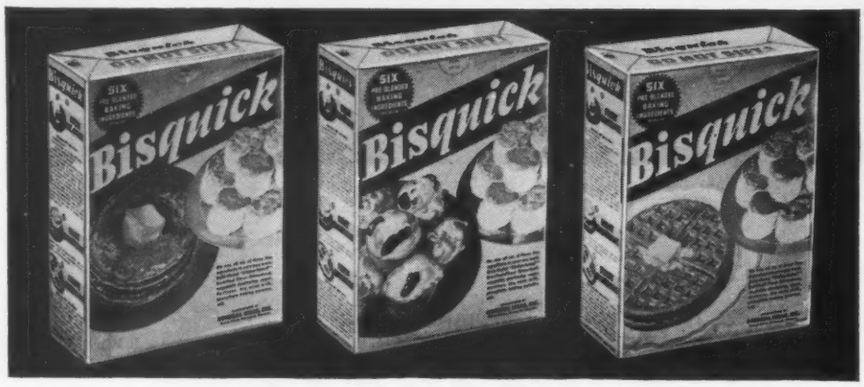
Because of the wide variety of products mentioned in the replies, the subject does not lend itself to formal tabulation, yet the comments fall into something of a pattern and also indicate that the women in many cases are making the very same criticisms that many food manufacturers have already taken into account in the redesign of postwar packages to meet today's requirements.

For example one woman's comment about Quaker Oats packages, "That old Quaker has stood there a long time. Change it!" practically dovetails the action already taken this year by the Quaker Oats Co., which has placed on the market a completely revamped line of packages modernizing the old picture of the Quaker (MODERN PACKAGING, April 1946, p. 126).

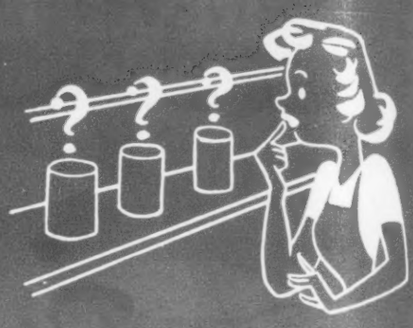
The replies further indicated that women rely heavily on the appearance of a package for their preferences and are likely to judge the quality of a product by the looks of the package. One woman said of the new Armour packages, introduced during the past year (MODERN PACKAGING, August 1945, p. 91) "The labels are so attractive I wish I could buy everything in them."

Brands are a determining factor in the selection of a product, according to a majority of the women and they don't like not getting their favorites during the present period of shortages. Next to brand identity, they want product name displayed prominently. In the case of family packages containing different products made by the same manufacturer, they don't like labels too similar in color and design, if it is difficult to pick out the different products in the family quickly. One woman complained she often ends up at home with one variety of a cereal when she thought she had another because the packages looked so much alike.

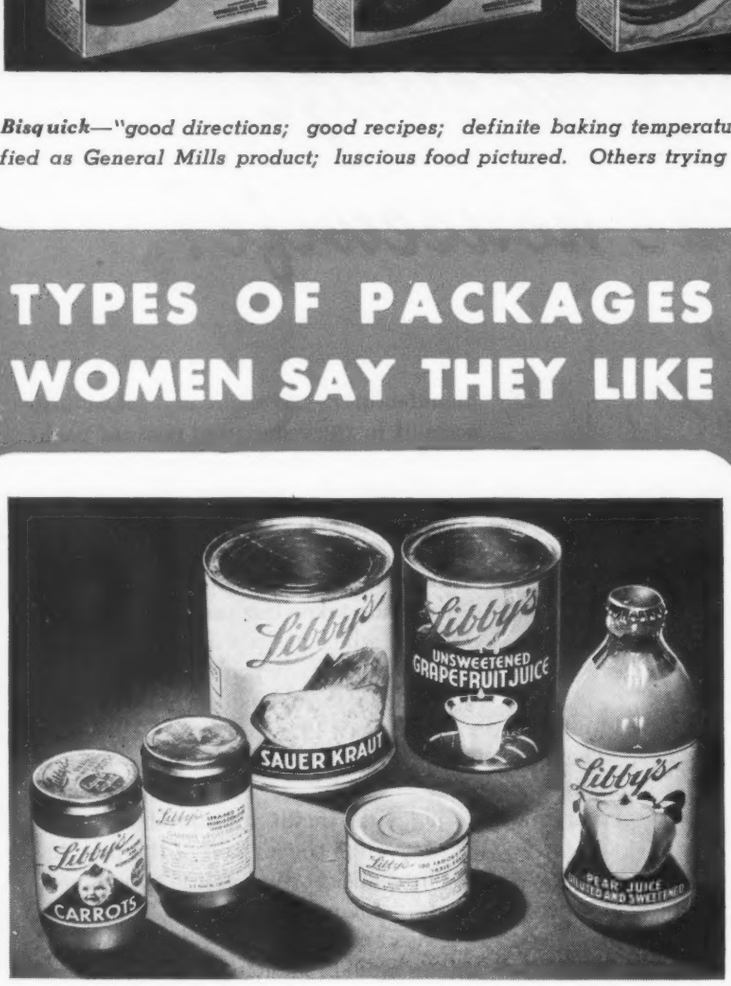
The women like packages that have well arranged design layout and type big enough to read easily. They don't want to take out their glasses in the grocery store to read labels and they don't usually wear their glasses in the kitchen. They want to read the labels, directions and contents easily and quickly without glasses. They like illustrations of the product on the package, prefer color pictures and like realistic color photographs best of all. They criticized the packages of



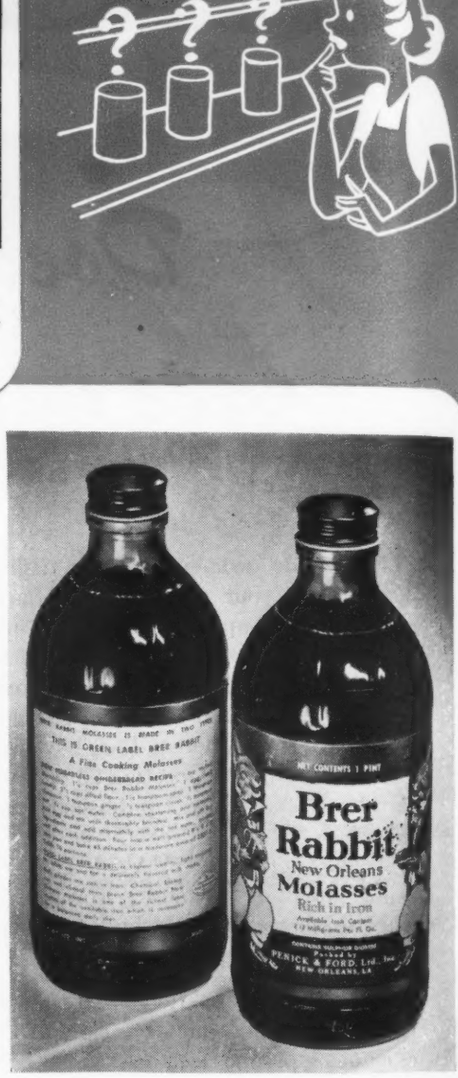
Bisquick—"good directions; good recipes; definite baking temperatures; identified as General Mills product; luscious food pictured. Others trying to copy it."



TYPES OF PACKAGES WOMEN SAY THEY LIKE



Libby's (whole line)—"attractive; full information—the most informative labels of any brand of processed foods; good pictures."



Brer Rabbit Molasses—"contents given in liquid measure; attractive, well organized label; food values given; the two grades explained; very legible labeling job."

Green Giant Peas—"I know when I see the giant that these are good peas; accurate description; vitamin content; an appetizing picture, the peas look fresh; this is what I consider a good label."

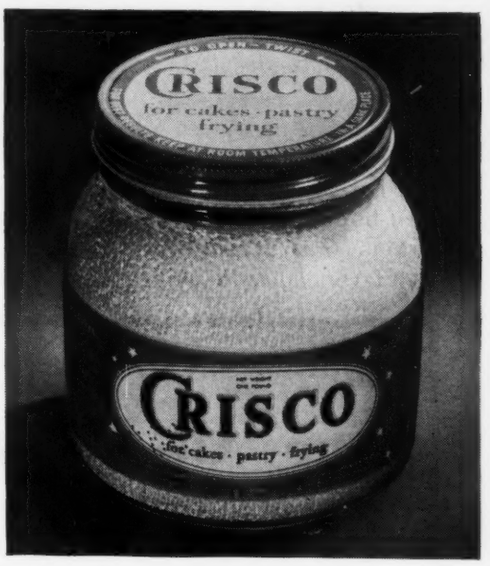
some long-time favorite products because they were too old-fashioned and without pictures to show at a glance what the product looks like. They don't like irrelevant pictures, either. They want the pictures to tell the product story.

Over and over again the women expressed their preferences for transparent packaging—cellophane packages and packages with transparent windows. They said it might be a good thing if all products such as cereals, macaroni and rice could be put in "see through" packages, so that contents would be visible and you would know how many servings you have on hand (MODERN PACKAGING, August 1945, p. 115). They are disturbed too when they get cereal or macaroni packages only partly full, still not appreciating that some foods settle after packaging. They did not seem to feel, in these cases, that it was a "matter of not getting their money's worth," but that they want to know quantity by the size of the package.

They like product names printed on the sides of cartons as well as on the front and back. Most cartons are stored on shelves sidewise and side printing helps to pick out specific products more easily from kitchen cupboards.

These women want accurate, simple information about contents. They don't like words like "hydrogenization," which almost nobody understands. They don't like words like "certified," "artificially," "rich in" when they don't know what they mean. The word "preservative" bothers them and possibly indicates a need for educational work in the food industry for acceptance of chemical explanations so that women will accept them just as they now accept sugar, vinegar or other familiar preservatives. There were many re-

Heinz products—"simple; clear; uncrowded; good colors; different colors for different packs of beans save time."



Crisco—"like the color; can locate package quickly in store and at home; particularly attractive design; no unnecessary directions, good recipes; information clearly stated; neat presentation; all advertising dignified; wrapping makes you know article is 'smooth'; clean-looking; the directions for keeping pie-crust tell you all you need to know." No comments were given to show consumer preference for glass or metal packaged Crisco.

Del Monte—"good labels; give the amount of food in can in terms of servings; description of product so you can tell if it fits your purpose; concise yet comprehensive contents clearly specified; attractive label, like the colors and picture; tomato sauce contents given by the cupful; how-to-buy information."

quests for contents expressed in cupfuls, particularly on canned milk, prepared mixes, molasses and other products used in recipes calling for cupfuls instead of ounces.

Companies who pride themselves on the good will value of time-honored package designs may get a jolt when they hear that some women complain that such packages are old-fashioned. Sometimes they refer to them as "quaint." Some of these they like, such as the Baker's Cocoa girl, which is mentioned affectionately many times.

Some who answered felt there should be improved directions on packages for storing—temperature, for example, at which to store salad dressings and other types of food products.

Homemakers, particularly, make use of the package for recipe information in planning meals for their families and complain about too many recipes crowded on the package if hard to read. Nor do these women want packages "too busy" with promotions of other products put out by the same manufacturer. This irritates them. They don't like packages with directions inside the package; they want to be able to read them when buying. And since the Market Basket Quiz shows that 99% of the women who answered read labels on canned or packaged food, that two-thirds pay much attention to labels and more than half always read them, this is a point to consider.

In addition to the comments on package appearance and label preferences a number of valuable suggestions were made concerning convenience features they would like to have incorporated.

Most often mentioned was the absence of any means of closing packages of pancake and other mixes, sugar, soap flakes and so forth in the home, where foods stand open to dust or insects—or are easily spilled once the carton end is cut and turned back. They commented most favorably on the types of cartons National Biscuit Co. uses for Graham crackers, Uneeda Biscuits and Ritz crackers, which have a re-usable folding flap. They would like more efficient envelopes in dessert powder packages to prevent spilling after opening. They like containers with pouring spouts such as those used for Morton Salt.

Strangely there were no mentions of some obvious package problems such as closures which are difficult to pry off or the desire for cans which can be opened without a can opener. Nor did they comment on glass container shapes which are too tall to fit on refrigerator shelves, which tip over too easily, or which have mouths too narrow for good dispensing. They did not cite either the need for tearing tapes or other easy-opening devices on heat-sealed bags and packets.

Comments on glass containers were most complimentary, but a bit left-handed. A number of women said they hated to throw away glass jars and like them to be re-usable. One woman said, "I buy in tins because glass jars crowd me out of my apartment." Another says she won't buy coffee in jars because "Mason rings and lids don't fit"—so she can't use them in canning. To avoid this sense of wastage, she buys coffee in paper bags. Such comments may suggest to glass companies the feasibility of furnishing jar rings and lids to accommodate re-used glass containers for home canning, similarly to the way they promoted the "Thrifty Lid" to save glass during the war.

To sum up: women appear to want all the description necessary to choose according to their families' "needs and tastes." They want clean-looking labels, uncrowded, well organized, easy to read without glasses, and information which tells them what to do with a product after they get it home. They want to know who packed it, when and where.

To give them what they want is GMA's challenge in its campaign for descriptive labeling.

The All-America must again be deferred

Last fall, after a careful study of current conditions, it was announced that the ALL-AMERICA PACKAGE COMPETITION would be deferred for one year.

Those conditions have changed very little; in some respects the change has been for the worse. The package buyer is lucky indeed today if he can obtain any adequate supply of containers for his output—lucky if he can even produce a quota anywhere near normal. Package planning goes on, but the number of new designs launched is but a trickle compared with the flood that was expected. The designer, too, must wait for normalcy.

Transportation facilities are still crowded; space is impossible to obtain; trained help is still scarce; most serious, the routine conduct of any business leaves little time for interest in competitions. The chaos of peace, so far, seems as bad as the confusion of war.

Under these conditions, neither competitors nor sponsors would be satisfied. The only course is to wait until the situation is such that a successful competition would be reasonably certain for everyone concerned.

1—*Clear-cut, easily read labeling of the redesigned Ward packages is apparent in this group of automotive items. Note how family treatment promotes immediate product identification and gives the packages decided display impact. Similar treatment, under unusually close packaging control, is being given to the thousands of items in other Ward lines.*

Montgomery Ward

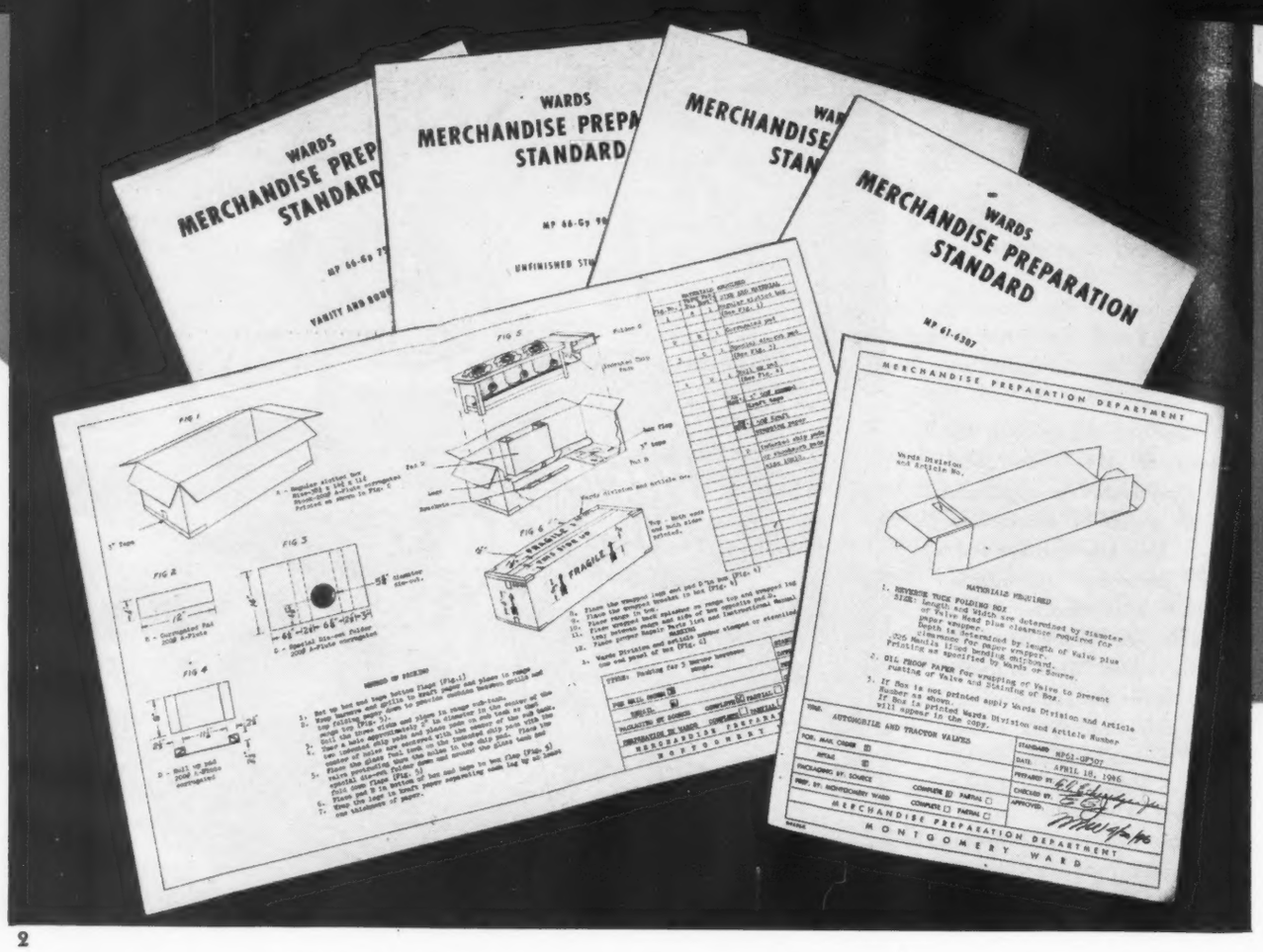
. . . a master plan of packaging by a master of merchandising

The rise of the great U. S. mail order houses forms a stirring chapter in the saga of American business. These progressive organizations, from modest beginnings, have steadily extended their facilities and services until today the teeming metropolis as well as the smallest hamlet finds its business life accelerated and enriched by their operations.

To what do these companies—whose present operations, incidentally, are retail as well as mail order—owe their success? Their formula is basic: they give the buyer what he wants, at a fair price, and make certain that the merchandise reaches him in an attractive, usable condition. The latter consideration depends largely on properly selected packaging materials and methods. As the development of new retail outlets by the mail order firms continued, the purely functional aspects of packaging were augmented by problems of surface design. And the modern swing to self-service merchandising, no less apparent in mail order retail outlets than in many other types of business, has placed an increasingly heavy merchandising responsibility on the package itself.

One mail order concern whose postwar packaging program merits attention because of its orderly approach to a seemingly interminable assignment is Chicago's Montgomery Ward & Co. Ward's current packaging activity, under the direction of J. G. Witte, manager of the company's merchandise preparation department, constitutes ample proof that no packaging job is too big if broken up into a number of smaller ones. This "divide and conquer" technique is enabling the company to carry out a long-term program in which all phases of packaging are intelligently studied and the results integrated under a clearly defined master plan.

Despite its magnitude, the Montgomery Ward pro-



2

2—*No packaging or labeling detail is left to chance. Printed Merchandise Preparation Standards, work of 42 packaging engineers, are gradually being extended to every item shipped to store or direct to customer.*

gram is moving steadily along because it is projected on sound fundamental concepts. Perhaps chief among these is the fact that this organization, which has approximately 600 retail outlets and buys perhaps $40,000,000 worth of packaging annually, does not regard packaging as an expense item, but as a legitimate part of the merchandise which makes possible completion of the sale.

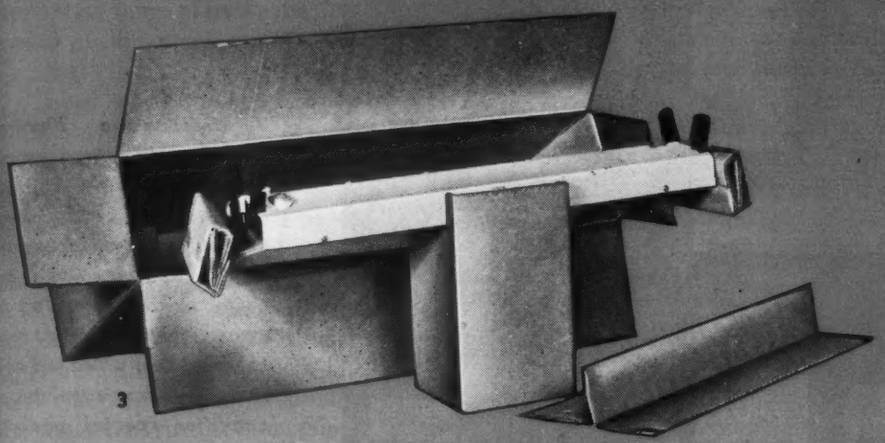
"We in the U. S., dating back to the country grocery store, have unfortunately retained, in a measure, that proprietor's idea of a package," declares Mr. Witte. "On his books, he considered the paper bag that he used to put the crackers into, from the barrel, an expense item. It was not an expense item. No one would have bought crackers and carried them home in his hands. It was definitely part of the merchandise.

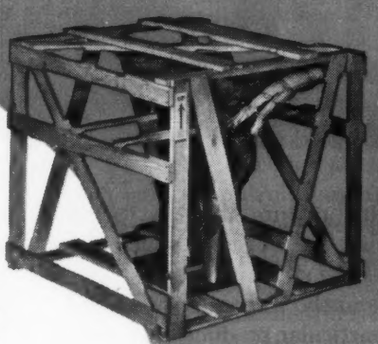
"When you buy a refrigerator, you don't buy that refrigerator to use at the end of the production line. You buy it to use in your own kitchen, and until it is in your kitchen, it is of no value to you. Part of the value you are buying is the container that is the vehicle in which the refrigerator travels from the factory to your kitchen."

Another guidepost of the Ward packaging program is the principle that all conditions relating to the handling of the merchandise at the point of sale be closely investigated. Before a packaging engineer can be expected to design a satisfactory container for a given article, he should know whether the customer will handle the merchandise himself, or merely look at it. In some instances, a product may be sold from a floor sample and delivered from the warehouse, while in others it is carried out by the buyer. Mr. Witte estimates that millions of dollars' worth of packaging is wasted through lack of proper study at point of sale.

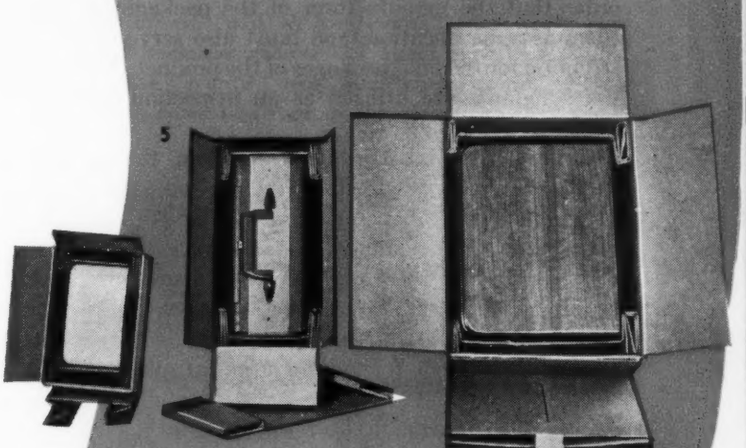
Spark plugs are cited as an obvious example of this common oversight. Seventy per cent of the automobiles in the U. S., it is pointed out, are six cylinder cars and some 20% eight cylinder cars; yet the customary retail display package used throughout the industry holds ten plugs. Since very few customers buy the full assortment, nearly 100% of the display boxes are discarded before the customer sees them. The carefully prepared promotional and instructional copy goes in the wastebasket, the customer takes his newly purchased plugs home in a plain bag or other utility container and a valuable merchandising opportunity has been thrown away—simply because the unit of pack does not agree with the unit of sale.

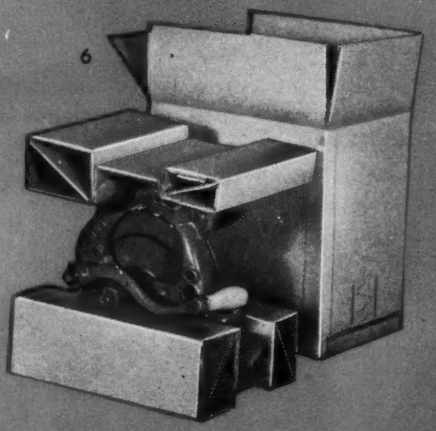
In the Montgomery Ward packaging program, a great deal of attention is devoted to the proper unit of sale and other point-of-purchase problems. The ideal worked toward is that the package, at the point of sale, must correspond with the average customer demand. A corollary problem relates to the quantities in which various items are requisitioned from the com-





3—Protective packaging for fluorescent fixture shows type of packing specified in one of the new standards. **4**—*Drop-leaf dining table in crates specified for maximum protection, minimum cost.* **5**—*Small radios in regular slotted cartons with specially designed end pads.* **6**—*Previous manufacturer's package for this hand corn sheller was not suitable for shipment to Ward customers; repacking brought total cost of packaging materials on this item to 40 cents. War-engineered carton and inner packing, now used by manufacturer, takes product all the way to consumer in perfect condition; cuts cost to 24 cents.*





pany's pools, or warehouses. This calls for determining what the average ordering unit is, and what it should be.

"The package, whether it be 10, 12, 100 or a boxed unit of six cartons of six each, or in any other combination, must tie in with and match the average, or, in our own particular case, the required unit of purchase by the retail store," Mr. Witte says. "This same line of reasoning goes back all the way to the point of manufacture and must be applied at every point a middleman enters the chain. It finally goes back to the production line at the factory, and that question of 'What quantity to pack?' is automatically answered and answered on an economically sound basis."

No phase of packaging is left to chance under the new Ward program of redesign and integration. The company's merchandise preparation department, with offices in Chicago, New York and Oakland, Calif., has a personnel force of 85, of whom 42 persons are regularly engaged in protective package engineering. All essential problems relating to the company's extensive packaging activities are handled jointly by the three principal sections of the merchandise preparation department—package engineering, surface design and merchandise literature.

The package engineering department plays a key

7

***7**—Merchandise literature, including fact tags, owner's guides, instruction and care sheets and tags, supplements the engineering and surface design phases of the integrated Ward packaging program. The Carol Brent stocking package, a printed cellophane window envelope, exemplifies special packages designed for fashion items.*

role in the Ward packaging picture through its responsibility for the drawing up of all merchandise preparation standards. These standards, whose formulation goes forward constantly, illustrate sound and economical packaging for particular products or groups of products. They must be technically correct, in order that the manufacturer of the package may use them as a specification, and must also serve as an instruction for the final packager of the product. Finally, the standards are utilized as an inspection guide on product packaging.

Close liaison is maintained between the package engineering section and the Ward buying organization to insure that the company's numerous sources of supply pack in accordance with its recommendations and standards. Some of these standards concern individual items and others, groups of items. In addition, certain standards are more general, describing packaging methods for various types of merchandise.

In some instances damage reports, emanating from the traffic department, lead to the drawing up of a standard. Working closely with the operating department and in intimate contact with merchandising activities of both the retail and mail order divisions, the package engineering section keeps a weather eye on these reports, which include such information as the shipping point, carrier, shipper, final destination, extent of loss or damage, amount of claim and type of merchandise. If the volume of such reports on an item is excessive, the department analyzes the claims and takes corrective action where inadequate packaging is indicated as a contributing factor.

The merchandise preparation standards are models of clarity, employing a minimum of explanatory text matter and depending primarily on simple drawings to illustrate how an article should be packaged. Usually, several views showing the different steps involved in packing the merchandise are included, together with a tabulated summary of packing material keyed to the different drawings. Information in the lower right corner of the standard tells the type of merchandise covered, whether for mail order or retail sale, whether packaging is to be by the company itself or by the supplier, the code number of the standard and the date when it was issued.

Merchandise preparation standards are originally drawn on regular vellum coth, then planographed and formalized after approval. A few are illustrated with photographs, but this is not usually the case. When necessary, a black and white print of a newly prepared standard can be made on short notice and mailed to a supplier to guide him in packaging an item.

In preparing the standards, the package engineering department works in cooperation with a design laboratory in which packages may be tested. The scope of the standards may range from small bottles of vitamin capsules to such items as stoves and refrigerators, covering, in general, most types of merchandise sold in the consumer goods market. Cost engineers and designers work together on their formulation, the latter being concerned with proper design while the cost engineers develop figures pertinent to such packing.

With relation to package costs, Mr. Witte has this to say about the fallacy of skimping on materials:

"Fifteen years ago, when hourly wages in industry of 30¢ and 35¢ were not unknown, the cost of the material in a package often represented the major part of the total cost. Today, we have a different situation. Our own experience in hundreds of cases has proved to us that very often it is more economical to spend an extra nickel or dime for packaging materials and thereby reduce the man-hour time necessary for application."

The Ward merchandise preparation standards embrace a wide range of packaging materials and methods, because of the great variety of merchandise which they must cover. For example, Standard MP-61-Gp 307, issued April 18, 1946, covers automobile and tractor valves. This brief standard, confined to two sides of an $8^1/_2$ by 11 sheet, shows a single perspective drawing of the reverse tuck folding box required for these products. Length and width are specified as determined by diameter of valve head, plus clearance required for paper wrapper. Depth is determined by the length of the valve plus paper clearance. The container called for is of 0.026 Manila lined bending chipboard, with printing as specified by Wards or its supplier. Oil proof paper is specified for wrapping the valve to prevent rusting it or staining the box.

Another typical standard, MP 68-1104, covers the packaging of a three burner kerosene range. Necessarily more involved than that cited above, this standard is clearly illustrated with six drawings, including three in perspective, which detail the method of inner protection to be employed. The container specified is a regular slotted box of 200# A-flute corrugated, measuring $38^1/_4$ by $14^1/_4$ by $11^1/_4$ in. The corrugated pad, special die-cut pad, roll-up pad, gummed kraft tape, 50# kraft wrapping paper and indented chip pads or shocksorb pads to be used in preparing the pack are summarized in the material list, while the method of packing is detailed in 12 easily followed steps.

A packaging standard, before being accepted by Wards, must not only prove adequate from the standpoint of product protection, but must also meet other important requisites. The package specified, while protecting the merchandise so that it reaches the buyer just as it looked in the catalog or on the counter, must also represent an economical method of packing from the production standpoint, must satisfy transportation requirements and rate standards, and must have merchandising appeal. Sometimes this is a pretty big order, but the experience of Montgomery Ward proves that all such criteria can be satisfied when the problem is approached simultaneously from all angles.

Closely allied with the work of the package engineering section is that of package and literature design. It is the efforts of this section with which the retail buyer is most familiar, since it has the responsibility of establishing the design elements of the package—the colors used, character and arrangement of typography, product designation, instructions for use and related details.

Since standards of design had not previously been written, the former packages showed variations in the location of informative elements, in company signature, in type selection and in colors. Of even greater importance was the fact that they had no consistent method of expressing different qualities of merchandise. It was particularly desired that the Good, Better, Best quality designations featured in the company catalog be adopted on the redesigned packages to identify all Ward's quality graded merchandise.

Hundreds of sketches were prepared and evaluated before the ultimate design was chosen. This design, thanks to its fundamental simplicity, has the happy faculty of lending itself to a "family" treatment. In addition, the conservative, flexible basic motif, timeless yet contemporary in feeling, stands out clearly when surrounded by packages of more complex design.

The redesigned Ward packages have white lettering on a single color background, with a quality color band encircling the package below the general name "Wards." A green band is used for "Good" quality, red for "Better" and blue for "Best." At the top of the package is a statement of contents, while below the quality band appears the name of the product, followed by any necessary descriptive copy. The company signature is the final reading matter on the display face of the package. All copy is centered on the vertical axis, with the product name in the visual center.

The background color of each package is standardized according to a plan based on associated use by the customer, rather than being keyed to the company divisions as formerly. Customer color preferences, suitability of the merchandise and harmony are the principal factors in the selection of colors for the new packages.

A similar control plan governs the selection of type faces used on the packages, with five basic types adapted to the above product classifications. Thus the character of the merchandise is reflected in the style of lettering used for product identification. Hand lettering is employed only in rare instances, and an effort is made

8—*These are all "asphalt compounds," but to make sure the retail customer selects the exact type best suited to his use Ward's sets qualifying words of description in same size type as the general product name.*

8

throughout the line to hold the number of type styles and sizes on the packages to a minimum.

Ward packaging officials point out that the use of definite formulas for type and color selection does not stifle creative effort in adapting the new design to the host of packages used by the organization, but merely frees their hands for more important work. There remains, for example, the question of proper type size and the best wording for product description and instructions. Under the Ward formula, qualifying terms in the name of the product are printed in type as large as that used on the product name itself. This is particularly helpful to the customer who is buying from open displays, since it obviates the likelihood of his inadvertently picking up the wrong item.

In a family of packages as large as that used by Montgomery Ward, it not surprising that some do not come under the "Good, Better, Best" classification used for graded merchandise. For example, certain single-quality products carry just the identifying term "Wards." Pure food and drug regulations require a somewhat modified packaging treatment on some food and drug containers. Certain types of fashion items, such as the company's Carol Brent stockings and other articles of apparel, as well as cosmetic lines, also require individual packaging treatment.

On the Ward line of paints, varnishes and related products, some deviation from the basic package design is permitted in the interest of more economical production. Black lettering is used on a color background, making it possible to run off a stock of labels in the background color and fill in the descriptive matter later as inventory conditions permit. This practice also facilitates alterations in paint labels due to changes in formulas without scrapping entire plates.

The reverse side of the redesigned Ward packages, devoted to a straightforward presentation of facts about the merchandise, is handled in a manner similar to the Fact Tags used on the company's tagged merchandise. Factual information on this face of the package is given in the following order:

a) Quality color band, where required
b) Product identification
c) Selling features which require emphasis
d) What it is
e) What it will do
f) How to use it
g) Quantity
h) Catalog order number
i) Company signature

Other faces of the package may repeat the display face identification or may carry further factual information, in cases where space limitations are severe.

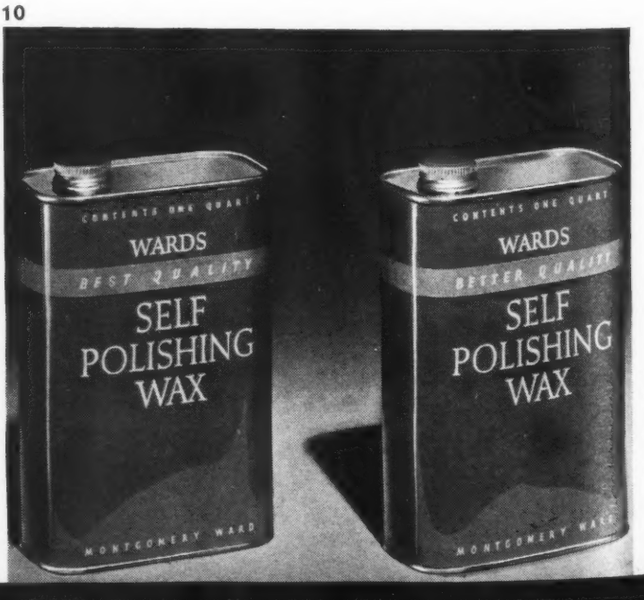
The formulation of standards of package color and design has not only greatly simplified adaptation of the design to a great number of packages, but has also brought tangible merchandising advantages. It is recognized that the uniform standards promote greater consumer recognition of the breadth and fundamental character of the company, while the quality grades, tied in with the system followed in the company catalog, become a positive sales element when uniformly expressed to the customer and sales clerk. General use of these quality terms also enables sales personnel to be shifted from one department to another as needed without confronting them with unfamiliar merchandise. Standardized handling of label material makes it easier for both clerk and customer to compare products intelligently and make a satisfactory selection.

The final phase of merchandise preparation is handled by the merchandise literature section, which prepares all Fact Tags, owner's guides, special package inserts and other printed material that accompanies merchandise sold under the company's own name. Inserts, ranging in size from a single sheet $2^3/_4$ by $4^1/_4$ in. to a 48-page book $8^1/_2$ by 11 in., carry helpful information on the installation, operation and (*Continued on page 174*)

9—*Display face and fact face of wax package illustrate incorporation of full product information without detracting from display value. Every "Fact" panel, whether on tag or package face, is clearly labeled as such.*
10—*"Better" and "Best" quality bands encircling wax packages typify handling of quality-graded merchandise. Treatment, tying in with catalog, utilizes green for "Good;" red, "Better;" blue, "Best."*

9

10



Black phenolic, injection molded, makes the custom designed plastic containers and chunky, masculine closures. Silk screen labels on bottles are alcoholproof. Boxes are traditional Mark Cross gray with red edging.

A man's toiletry a man can use

Men's toiletries should be so packaged that a man will be proud to use them anywhere—not only at home because the wife bought them for him but when he takes them out of his grip before his fellows on a train or in the club locker room.

Such packaging, Mark Cross believes, demands the ultimate in simplicity and good taste. In designing containers for "Cross Country," their new men's line, they have acted on this principle.

That such conservative package treatment pays off in today's highly competitive men's toiletries field, is indicated by the fact that Mark Cross has already secured national distribution in more than a hundred of the country's top department stores and haberdasheries at a time when the packages are still in the handmade dummy stage and six months before promised delivery.

The whole group of packages has the distinctive restraint associated with a prestige name like that of Mark Cross. They are planned not only as packages which women will buy for men, but which men will buy for themselves. Today about 70% of men's cosmetics are bought by women, but Mark Cross believes the trend is toward more purchases by men.

The containers include four of plastic, two sizes of bottles of simple round design with private mold plastic caps that have a masculine grip and set-up gift boxes to house the glass and plastic containers. Four gift ensembles and several leather travel cases complete the line.

The bottles for the four liquid products are provided with silk screen labels, baked to 300 deg. F. to make them impervious to alcohol and to resist chipping and scratching. The borders on the labels and the Mark Cross trademark appear in a different color on each label for the four different products: gold for shave cream, green for cologne water, dusty rose for after-shave lotion, blue gray for deodorant. This makes it easier for the salesgirl as well as the user to identify each. The tradename, "Cross Country," skillfully worked with a scroll, is overprinted on each in black. Bottles are adopted in two unusual sizes, three and eight ounces, selected partly for suitability in the gift ensembles.

The four black plastic containers are for talcum, after-shave powder, shaving stick, and a shaving bowl. These are injection molded of phenol formaldehyde. The rich, brilliant black surfaces are livened by the Mark Cross crest rubbed in on the tops in gold and by the "Cross Country" name and scroll in gold on the sides of the taller containers. The same chunky type cap used on the bottles is adapted for the closure of the after-shave powder and shaving stick containers. The powder box and the shave (*Continued on page 176*)

Rep. Fritz G. Lanham, of Texas, sees the culmination of his eight-year fight for trademark protection in the Lanham Act, signed into law by President Truman. His victory won, Rep. Lanham will retire from Congress after serving 14 terms.

The Lanham Act . . . *trademark protection at last*

Signature by President Truman last month of the Lanham Trademark Bill culminates more than eight years of effort on the part of Representative Fritz Lanham of Texas to modernize the archaic trademark legislation of the United States.

The new law, which becomes fully effective one year from the date of its signing, will bring a new era of protection, national and international, to holders of existing trademarks, and guarantee the incontestability of trademarks used over a period of years.

Importance of this measure at this time, when the overwhelming trend in the marketing of food and many other commodities is toward pre-packaging and distinctive wraps—nearly all of which include the use of a trademark or other recognizable mark identifying the contents with the producer or marketing agency—cannot be overemphasized.

In addition to its importance to the manufacturers and distributors of trademarked commodities, as well as to those industries whose products are labels, packages and other vehicles for conveying the trademark into the home of the consumer, the measure opens an enlarged field for those businesses whose sole reason for existence is the familiarization of the buying public with the products of their clients—advertising agencies and public relations organizations.

There is no doubt in the minds of Government officials in Washington that enactment of the new legislation will be one of the greatest sources of impetus to the new trend toward pre-packaging of products not usually packaged at present. Of course, no one is prepared at this time to estimate the volume, year-by-year, which the new law will add to pre-packaging (which, of course, entails labeling and trademarking) of the many groups of commodities now moving into the packaged-merchandise field, nor those which may be encouraged to try to enter the field as a result of the stimulus of the new protective legislation.

However, there is no doubt but that the tremendous increase in registration of trademarks, and the enlarged field for trademarked goods even now in the process of development will have an impact for the better on nearly all phases of the industries producing and selling packaging materials, containers and similar products, along with the producers and distributors of the packaged products themselves.

The foregoing is a good cross section of opinion in Washington among men who know the packaging and merchandising field.

Another group whose field will be expanded as a result of the new legislation is the patent law profession. Already some of the larger patent law firms are laying plans for expansion and establishment of separate trademark divisions.

Recognizing that the Federal laws under which trademarks were registered, but not adequately "protected," were in desperate need of modernization to bring them into line with commercial and judicial practices and developments of the Twentieth Century, Mr. Lanham introduced the first bill aimed at this end in 1938, before the 75th Congress. It got no further than sub-committee hearings.

Bills were introduced in subsequent Congresses, and passed by one or both houses, but inconsistencies in versions precluded final passage until the 79th Congress this year, although the earlier bills, like the one which has become law, had the support of the National Assn. of Manufacturers, the U. S. Trademark Assn., the Assn. of National Advertisers, the Trademark Committee of the National Bar Assn., principal patent law associations and industry in general.

In 1941 a trademark coordination committee made up of representatives from 12 organizations with George E. Folk, NAM patent adviser, as chairman, made extensive suggestions for revision of the bill pending at that time. Substantially all of these recommendations were followed by Mr. Lanham in a redraft which has resulted in the new law.

The Lanham bill probably would have been enacted a year or two ago, had it not been for opposition by the Department of Justice, spokesmen for which agency expressed the fear that some of its provisions would open the door to monopolistic abuses of trademark rights and to violations of the anti-trust laws. Members of Congress, however, generally agreed with Senator Claude Pepper of Florida, who guided the measure through the upper house, that these objections were "not germane," and that anti-trust violations, if any, could easily be taken care of through other laws of the United States "so that the public will be protected."

The law, as passed, expressly provides that none of its parts shall be construed "as limiting or restricting any statute in force on the effective data of this act which does not relate to trademarks, or as restricting or increasing the authority of any federal regulatory agency."

It was the opinion of the Congressional committees which held hearings on the bill that this saving clause constituted sufficient assurance to the various Government agencies that the legislation would not hamper in any way the enforcement of the anti-trust laws, the Federal Trade Commission Act, Food, Drug and Cosmetic Act of 1938, or any other federal statutes.

Briefly, the new act provides for:

1. Recodification of all federal provisions relating to trademarks. There had been many widely scattered statutes, in tariff acts and other unlikely places, although the primary law was the Federal Trade-Mark Act of 1905, which, like most of the others, was based on the obsolete concept that trademark protection is primarily a matter for intrastate as compared with national and international operations.

2. Adaptation of trademark protection to modern conditions of nationwide and international advertising and sale of goods. Under the laws in existence prior to

WHAT IS A TRADEMARK?

Perhaps there is no clearer or more comprehensive definition of a trademark than one published in 1860 in a treatise by Francis H. Upton:

"A trademark is a name, symbol, figure, letter, form or device adopted and used by a manufacturer or merchant in order to designate the goods that he manufactures or sells and to distinguish them from those manufactured and sold by another; to the end that they may be known on the market as his and thus enable him to secure such profits as result from the reputation for superior skill, industry or enterprise."

Trademarks are probably as old as trade itself. Ancient pottery found in the ruins of the Far East and Egyptian civilizations bear unmistakable evidence of distinct marks used more than 2,000 years B.C.

Down through the centuries it has been customary for the manufacturer to use a mark, word or other symbol to identify and guarantee the origin and quality of his product. These have come to be known as trademarks, and in all civilized countries laws have been enacted to govern and protect their use.

TRADEMARK REPRODUCTIONS, COURTESY LOOK MAGAZINE.

enactment of the Lanham bill, the user of a trademark had no protection in markets not yet reached by goods bearing his mark, which, under present conditions of commerce, frequently resulted in his being barred from that market when he reached it.

3. Making trademarks incontestable after a five-year period of continuous use, in contrast to the previously existent uncertainty.

4. Registration of "secondary meaning" marks, which have become distinctive of the applicant's goods. Under the old law there was no federal protection of many marks which had an original geographic or descriptive meaning, even though the public had come to associate them with particular goods.

5. "Concurrent" registration of the same or similar marks to more than one user in cases where both users in good faith have adopted and used the mark in different parts of the country prior to the date of an application for registration by either of them. Under the old laws, only the first user anywhere in the United States was considered the owner of the mark for purposes of registration, and the Patent Office—contrary to the courts, according to patent lawyers—would not recognize the possibility of more than one owner of the same trademark.

6. Use of a parent company's trademark by its "related" companies.

7. Assignment of a trademark without simultaneous assignment of the entire business in which used.

8. Simplification of the registration process by coordinating administrative determinations of the Patent Office with those of the courts.

9. Coordinating our domestic law with the treaty obligations to which the United States is committed through membership in the International Union for the Protection of Industrial Property.

In advocating the measure, whose effective date was deferred for one year to permit trademark owners to adapt themselves to it and to suggest amendments which may be found necessary, spokesmen for organizations supporting the bill declared that manufacturers, particularly, are interested in obtaining legal protection for their trademarks and other trade symbols commensurate with the geographical scope of their advertising and other promotional activities. Rather than resorting to the slow and tedious process of seeking trademark protection state by state—by means of securing state registrations of little significance even within those states—they were desirous of having their business emblems protected both here and abroad wherever their meaning has become known.

Through passage of the new law, which recognizes the need for national protection and at the same time brings the basic trademark law into harmony with the various international conventions to which this country is a party, these ends are accomplished, and at the same time a foundation is laid for building up an enduring good will for both domestic and foreign business.

Proponents of the legislation (Mr. Lanham said at the hearings that "90% of the people interested in trademarks are favorable to the bill"), have singled out the incontestability provision as "perhaps the most notable improvement" in the new law over the old. This section provides that the right of a registrant to use his mark becomes incontestable after a five-year period of registration and continuous use.

Incontestability provisions

Provisions for incontestability are not new in the law of trademarks, although this is the first in this country. They have been in force for many years in Great Britain and in those countries which have adopted a system similar to British law. The tremendous advantages of the prospect of an incontestable right are immediately apparent to anyone who has had experience in securing and defending trademarks under the old law, provisions of which were such that a trademark owner could never be entirely certain at any time that his mark might not be suddenly declared invalid either by the Patent Office or in an infringement suit. It could be invalidated not only because of another's prior right at common law, but also because of its alleged unregisterability for purely technical reasons. For instance, under the Act of 1905, cancellation proceedings could be brought *at any time* on the ground that the mark should never have been registered, because of its alleged geographical, descriptive, or otherwise defective character, or because it was in conflict with another identical or similar mark at the time of the filing of the original application.

This left no assurance that the manufacturer or distributor who had spent millions of dollars popularizing his trademark, and had been using it continuously for a period of years, would be immune from attack on such grounds as descriptiveness, the fact that it was only a surname, or some other technicality.

Under the new law, as long as the registered owner does not abandon his mark, he has assurance that after five years continuous use following registration neither the Patent Office nor the Courts will look into the issue of original registerability of the mark. On the contrary, the courts will grant statutory relief against trademark infringement even if in their judgment the mark as originally registered may have been wholly or partially defective.

One interesting angle of the incontestability provision is that an otherwise incontestable mark may be challenged on the ground that it may have lost its trademark significance and may have become a generic term. This is what happened to "shredded wheat," "aspirin," "cellophane," and others. Under the new law, such a transition to the public domain is regarded as a species of abandonment, in that a mark will be considered abandoned "when any course of conduct of the registrant, including acts of ommission or commission, causes the mark to lose its significance as an indication of origin."

This provision puts the burden on the owners of trademarks to be eternally vigilant not to permit or encourage any generic use of their mark, either

through advertising or any other medium whatsoever.

With respect to the provision for registration of marks that have acquired a "secondary meaning," one of the severest criticisms that was leveled at the old law has concerned its failure to provide for such registration, even though the "secondary meaning" marks have become so well known to the public that it associates such names with their trademark significance rather than with their original geographic or descriptive meaning.

Under the new law, any mark "which has become distinctive of the applicant's goods used in commerce" may be registered. Substantially exclusive and continuous use of a mark for five years preceding the date of application may be accepted as prima facie evidence of distinctiveness by the Patent Office.

This provision will be acclaimed by thousands of trademark owners who, during the past 40 years, have been unable to get recognition and protection of their trademark rights solely because their marks may originally have been their own names ("Ford"), or geographic ("Philadelphia Cheese") or descriptive ("Coca-Cola") names.

Registration under the new law will serve to lend security, if not dignity, to literally thousands of names and designations which have been in legitimate use for several decades.

Another significant provision of the Lanham law is that permitting use of a parent company's trademark by related companies. The term "related company" is defined in the bill to mean "any person who controls or is controlled by the registrant or applicant for registration in respect to the nature and quality of the goods or services in connection with which the mark is used."

This section also closely follows the pattern presently prevailing in Great Britain and many other countries, and gives legal recognition to a well-established commercial practice—the permitting, through license agreement or otherwise, of the use of a trademark by those who are authorized by the owner to either produce his product under supervision and control or who distribute it under his direction.

This principle already has been sustained by the courts, but the inclusion of this provision in a statute eliminates any danger that exclusive title to trademarks may be challenged on the ground of the granting of manufacturing licenses or permitting the use of a trademark by distributing subsidiaries so long as there is no deception of the public or restraint of trade involved.

Registration by parent company

Under the Lanham law a parent company may secure registration of a trademark owned by it but primarily used by a subsidiary. Such an application would be denied under the old law.

The concept of stressing the identity of the trademarked *product* rather than its manufacturer is expressed in the section of the new law providing for registration of collective and certification marks. The definition of such marks in the legislation, reads:

> "Each of the terms 'collective mark' or 'certification mark' means a mark used upon or in connection with the products or services of one or more persons other than the owner of the mark to certify or indicate regional or other origin, material, mode of manufacture, quality, accuracy or other characteristics of such goods or services or to indicate a membership in an association or other organization or that the work or labor on the goods or services was performed by members of a union or other organization."

Under this definition, certain indications of regional origin, such as, for instance, "Idaho" for potatoes, or "Mohawk Valley" for apples may be registered as certification marks.

As far as collective marks are concerned, an amendment to the Act of 1905 (passed in 1938) already provides that a trademark registration may be secured by a person who does not possess a commercial or industrial establishment in this country but may exercise legitimate control over the use of the mark sought to be registered. The United States as a member of the International Union for the Protection of Industrial Property was under a treaty obligation to permit registration of this type of mark.

The section of the law which permits assignment of a trademark without simultaneous assignment of the entire business in which it is used is likewise regarded as an important step in the modernization of American trademark laws. A number of countries already have come to realize the commercial necessity of permitting at least partial assignments of trademarks, and most of the European nations have long-since departed from the common law rule which prohibited such assignment.

To quote again from the NAM, "There can indeed be no valid reason why a manufacturer should not be free—in the absence of deception of the public and provided always that such practices are not actually abused for purposes of restraint of trade—to split up his business either geographically or with regard to the various types of commodities produced and assign one or more of his trademarks separately to those who are interested in acquiring either production rights limited to one or more lines of production or territorial rights for a certain designated area."

Even though there were certain amendments made to the measure as a result of the Senate-House conference prior to passage, Representative Lanham is "happy" with the signed legislation.

At the same time, while the Patent Office appeared neither for nor against the law while in hearings, its spokesmen expressed the interest of the Office in its "workability." As finally drafted, it was said that the Patent Office was completely satisfied with the practicality of the law, and is now preparing for the procedural changes necessary to its administration.

OLD

These old Bayer packages are familiar on every drug counter, but they emphasize the word, aspirin, and subordinate trade name, Bayer. Problem was to accent Bayer without sacrificing in the slightest the identity of what is said to be the largest selling packaged drug.

100 TABLETS
BAYER
ASPIRIN
5 GRS. EACH
BAYER
Genuine

DOSE: 1 to 2 tablets with water
3 or 4 times daily as required.

THE BAYER COMPANY
Sterling Drug Inc., Successor
170 Varick Street, New York 13, N. Y.

BAYER
ASPIRIN

Used since 1900 for the relief of Pain and Discomfort in Simple Headaches and Neuralgias, Head Colds, Muscular Aches, and Pains, and as a Gargle for Relief of Minor Throat Irritations.

THE BAYER COMPANY
Sterling Drug Inc., Successor
170 Varick Street, New York 13, N. Y.
Full directions for use in leaflet

MADE IN U.S.A. BAYER PRINTED IN U.S.A.

NEW

These tipped on labels, front and back, for the bottles of 100's and the photo below show how skillfully such a design changeover may be accomplished. The new designs have also been streamlined and cleaned up to improve the all-over appearance of the packages and to provide more readable type faces. The new packages, without useless borders, also give a feeling of spaciousness.

Accent on Bayer . . . *spotlights the brand name*

If you are a keen observer, you will notice that Bayer Aspirin is appearing on drug counters in redesigned packages and counter display cartons.

If you are not, you may not even be aware that Bayer packages are changed.

The whole purpose of this redesigned family is to give greater emphasis to the name Bayer throughout, without sacrificing in the slightest the familiar identity of what is said to be the largest selling packaged drug in America.

In the beginning aspirin was produced only in powder form and dispensed on prescription. In 1916, after aspirin became an over-the-counter item, Raymond Foster, then sales manager of the Bayer Co., had the idea that Bayer might well offer aspirin tablets. Tablets provided the convenient unit for dosage and packaging of a branded product and has since become one of the most familiar remedies for the relief of pain and discomfort of headaches, colds, etc.

At first all aspirin in the United States was Bayer, but when patents expired, other drug manufacturers began making similar products and while the name aspirin was held by the courts to be a good trademark and owned by Bayer its use by others was permitted in certain ways. But the word aspirin was held to have become the generic name for the substance which chemically is monoaceticacidester of salycylic acid.

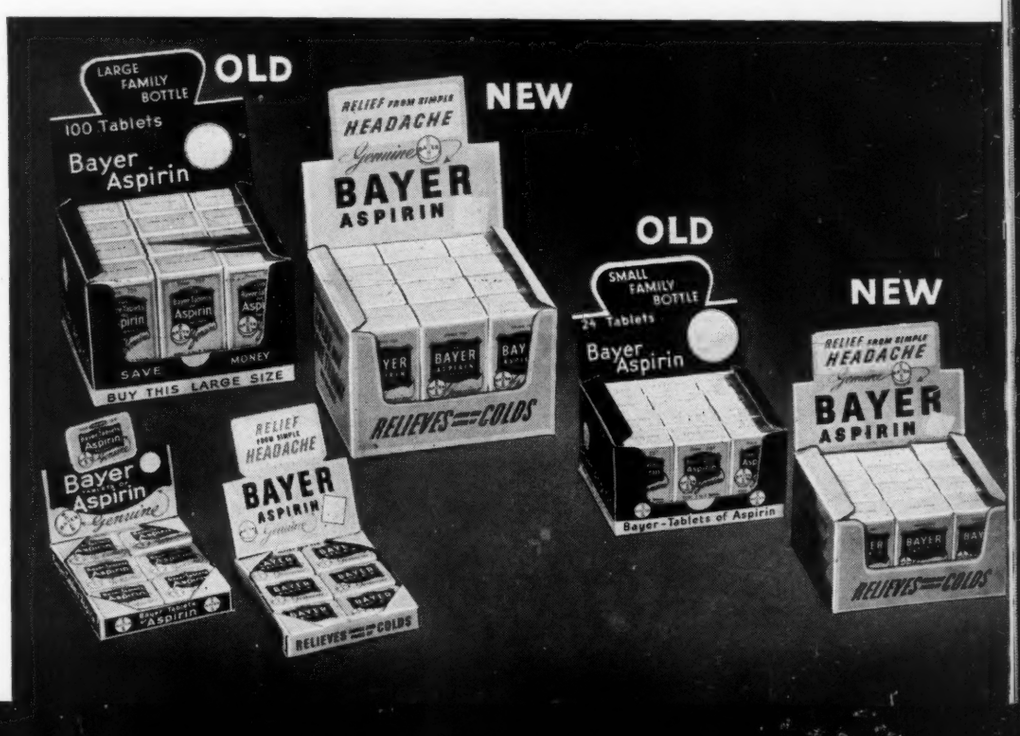
In the past, the Bayer Company has emphasized on its packages the word aspirin. But on the new packages the full emphasis is thrown on the word "Bayer." So skillfully, however, has the design been revamped that the change will scarcely be noticed except that every package is more unmistakably Bayer, with improved script of the word, "genuine" in red and an arrow point to the familiar Bayer Cross.

The redesign has been adapted to every size package in the line—the tins for 12s (back after their wartime holiday), bottles for 24s and 100s, cartons especially designed for the three unit-sized packages.

In the changeover, the company has also done a streamlining and clean-up job to improve the all-over appearance of the packages and to provide greater readability of the type faces. The front panels, containing the words "Bayer Aspirin," in reverse white on brown, although the same size, look larger because of a brown border replacing a former buff border. Elimination of the outer buff border around the edge of all panels, allowing the background yellow to meet the white edging also gives a brighter, cleaner appearance to the packages. Copy on the faces of all labels is unchanged, but the use of sans serif type in a different size gives a greater feeling of spaciousness. The company name in a bolder sans serif type also provides more emphasis on the name Bayer. The Bayer Cross trademark is unchanged in position and size.

Buff borders have been eliminated from back panels and the word Bayer in large caps dominates the area with secondary emphasis on aspirin and the Bayer Cross trademark. Selling copy has been reset in sans serif type and although more readable, appears to occupy less space than it formerly did and presents a simplified, uncluttered layout. Copy panels of the cartons have been similarly cleaned up. The yellow background color has been improved in tone value for better visibility.

An outstanding part of the package change, too, is a complete redesign of the counter dispenser cartons. There are three sizes of these to accommodate, respectively, the tins of 12s, the bottle-carton units of 24s and 100s. Basically the new (*Continued on page 176*)



All counter dispenser cartons have been redesigned—light backgrounds in place of former dark ones, that harmonize with modern light-colored store fixtures. On all these the trade name, Bayer, gets the top billing.

(*Page 105*)

Ashtray-coasters

These throw-away, ashtray-coasters, developed before the war—and adapted in principle during the war as substitute paper jar covers—are back as a household item with double utility. Made of asbestos and chemically treated paper, the coasters can be used as ashtrays as well, since asbestos absorbs moisture and cannot burn.

They are newly packaged, 12 to set, in a tubular transparent acetate container. A rolled edge at the bottom of the container holds the product in place and does away with the necessity for a bottom piece. A small cap-type lid covers the container. A white label inserted in the container carries sell copy and the name of the distributor and is clearly visible through the transparent plastic.

The combination ashtray-coasters, made by the Trayco Co., New York City, come in red, blue, brown and green, and present a colorful counter display when seen through the transparent acetate containers. A personal touch may be added by having one's initials or name monogrammed on both sides of the center disc in gold or silver.

CREDIT: *Acetate container, Merrick Transparent Container Co. Jamaica, Long Island, N. Y.*

design histories

Currie tricks

Crosse & Blackwell's investigations have shown that curried dishes are very popular but that many people who eat them in restaurants do not prepare them at home because housewives seem to think that they are hard to prepare. Therefore, the company planned its newly designed package for currie powder to "sell" the consumer on the ease with which this product can be used.

The outer folding carton was designed with two primary purposes in mind: (1) to provide a good carrier for the bottle and an informative, attractive recipe folder; (2) to make a package which would hold up well, offer good visibility and lend itself to display.

The result is this buff and brown carton which carries out the Oriental atmosphere created by Nancy Lee Rhodes' humorously designed insert, "Tricks with Currie Powder." Copy on the carton reads, "tested recipes enclosed," to call the housewife's attention to this folder and break down her reluctance to try curried dishes.

CREDITS: *Carton, Lord Baltimore Press, New York City. Bottle, Owens-Illinois Glass Co., Toledo, Ohio. Labels, A. Hoen & Co., Baltimore, Md. Closure, Aluminum Seal Co., New Kensington, Pa.*

(Page 106)

For the bar

With special emphasis on point-of-sale possibilities, great stress has been laid on package design for "Mr. Bartender," a liquor pouring device, a product of Modern Engineering & Development Co., Los Angeles.

The cartons, counter displays, window promotion features and a mechanically animated pouring demonstration are all built around the little Mr. Bartender character.

The chromium plated dispenser is packaged in a folding carton printed in black with touches of silver against the white of the board. Twelve of these cartons are packed into the shipping-display carton shown in the background. Easel-mounted cards carrying essentially the same copy as the display are being distributed for window and counter use.

To the left in the photo is an 18-K gold plated dispenser package in a two-toned box. The bottom is gold, the top black with a tiny reproduction of Mr. Bartender repeating the gold. The product is set into a die-cut platform which holds it in position for display purposes. A similar box is used to package two as well as three of these de luxe dispensers.

CREDIT: *Packages and displays, Packaging Service & Supply Co., Hollywood, Calif.*

design histories

A family of tools

A complete line of hobby tools merchandised for more than 20 different uses (MODERN PACKAGING, February 1945, p. 108), has achieved family identity by means of a newly adopted package design which can be adapted to all items from a blade to a complete tool chest.

X-Acto Crescent Products Co., New York City, makers of X-Acto hobby tools chose black for the background of the new package design with the trade name prominently displayed in brilliant yellow against a horizontal white-striped pattern. The little trade character in the upper right-hand corner appears on all packages and promotion pieces in red and black on a circular white ground. Both white on red and red on white are used for product or set name which appears in a rectangular spot just above the trade name.

In some cases where the package proved too long and narrow or too small for the placement of all elements in the same position as on the large box, the arrangement was shifted to allow each element to appear and yet not give an appearance of crowding.

CREDIT: *Designer, Philip Beaman, New York. Carton, Chopp Printing Specialties, Inc., New York. Wooden box, Vermont Box Co., Bristol, Vt.*

(*Page 107*)

from Cracker Barrel

...The significance of

PHOTO, THE PROGRESSIVE GROCER

1886 *Food came in bulk, shoppers in bustles.*

PHOTO, SUPERMARKET MERCHANDISING

1946 *The country store is a memory.*

Once a boy sat dreaming as he watched steam bobbing the lids up and down on the boiling kettles over his mother's hearth.

The boy was James Watt. During the 18th century his dreams were realized in the invention of the steam engine that was to revolutionize the social and economic life of the world—steam power that was to run the ships, the railroads, the mills and factories—that was to lure rural populations to the industries in the cities—that was to create vast new markets for mass produced foods, drinks, drugs and toiletries.

Packaging as we know it today began with the industrial revolution that followed the introduction of steam power and later electric power.

In a sense, there was packaging before that. There were "packages" as far back as man used goat skins to carry water, made crude pottery, glass bottles and baskets in which to store and transport his worldly goods. In 1035, Khorsan, a Persian traveler, reported that Arab merchants in Cairo were using sheets of paper to wrap up their wares. A Roman package containing an ointment with the maker's name engraved on the lead cover of a pottery jar and the famous Lambeth jar of Venice Treacle, a poison antidote, with the maker's name on the jar were sold in England in 1650.

The use of these containers, however, is scarcely applicable to the modern American conception of packaging to provide billions of convenient consumer sales units that protect the product through the channels of distribution from the time it leaves the factory until it reaches the ultimate user who may be thousands of miles from the place where the product is made. Nor do the early containers indicate the use of the package as a modern sales tool for promoting factory-made, branded merchandise and the good will of the maker.

Packaging as an industrial science is scarcely a century old. It is the child of mass production and competitive enterprise that gained momentum during the second half of the 19th century, changed buying habits of the American people and raised American living standards to a place of envy throughout the world.

The country store with its cracker and flour barrels where mice played and tabby cats tooks naps is almost extinct. In its place throughout the nation are thousands of modern food markets, chain stores, variety stores, drug stores, hardware stores, department stores, lined with shelf after shelf of clean, fresh packaged merchandise, contents untouched by human hands. As the years go by more and more products appear in consumer packages. In the not too far distant future, most of the fresh fruits, vegetables and meats may also be lining these shelves and counters in packages as well as hundreds of textile items previously sold loose.

The growth of packaging was encouraged by three significant factors:

1. The step-by-step development of mechanical methods for producing packaging materials, containers and equipment to fill and close them apace with the increasing output of industry that had to be distributed in packages.

2. Consumer demand for branded merchandise in packages that assured cleanliness, convenience, quality and quantity for which the maker was responsible.

3. Vision of enterprising manufacturers to see the advantages of using a branded package to advertise their products in a competitive market.

This morning for breakfast you probably had a cup of coffee that came out of a vacuum sealed glass jar, maybe some canned grapefruit juice, a dish of cereal that came out of a paperboard carton—almost as com-

to Supermarket

packaging in American economy

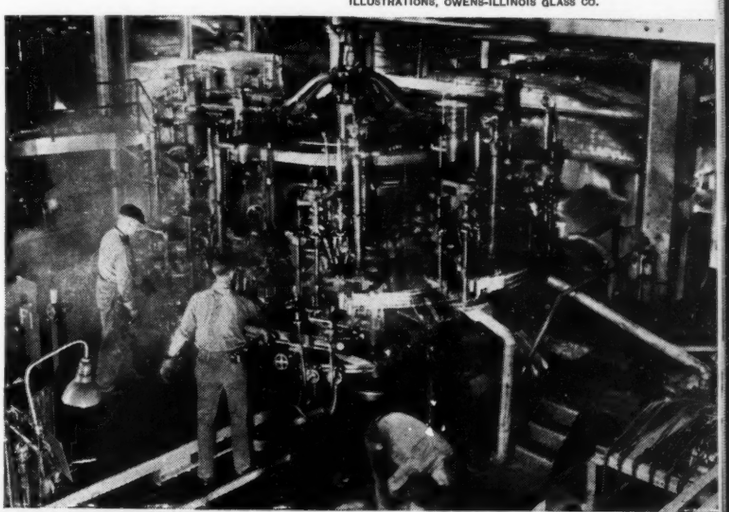
monplace an occurence to you as the sunrise. A hundred years ago—even 50 years ago—this would not have been possible. Yet to cover the whole story of human progress leading up to the delivery of those foods to your kitchen would take volumes and one must turn back again to the pages of history thousands of years.

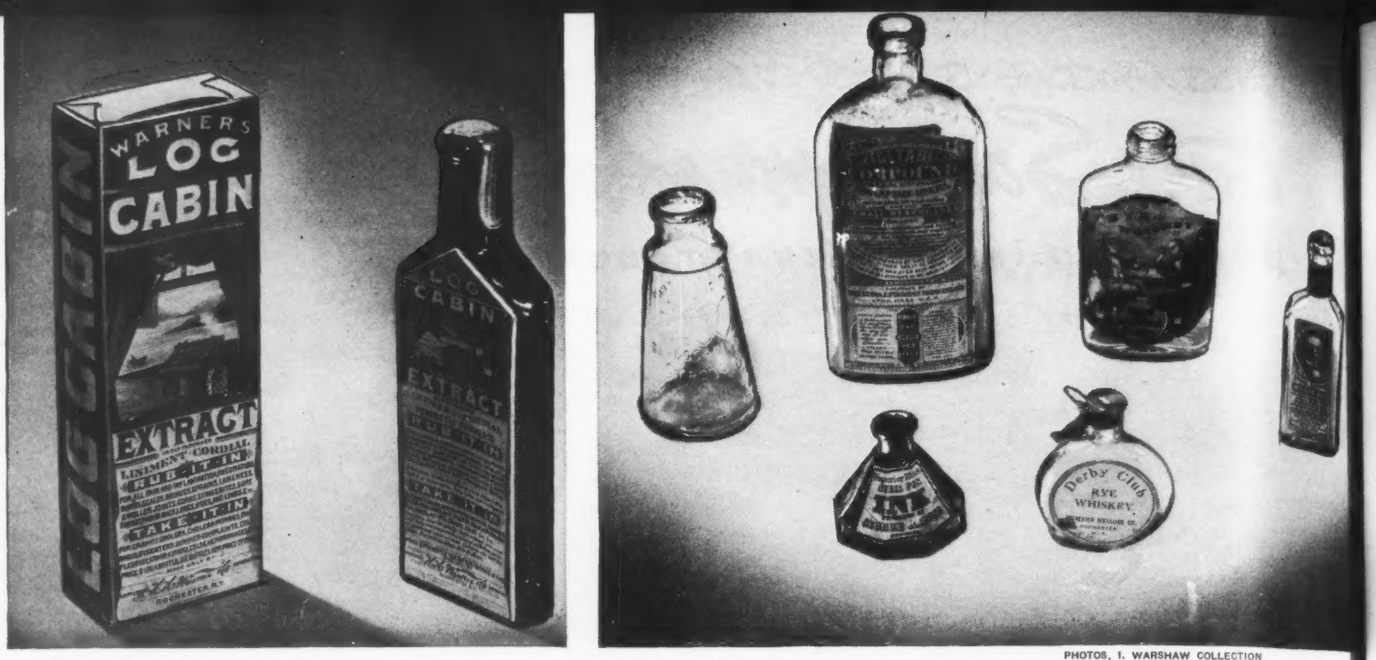
Modern glass containers, for instance, are produced by man from essentially the same materials Nature uses to fuse, by volcanic fire, the natural substance known as quartz. Quite by accident, it is believed, the ancients discovered that sand and soda ash heated to high temperatures would produce glass and there is evidence that decorative glass bottles were in use in Egypt more than 4,000 years ago, although the "blow-pipe" was not discovered until the third century, B.C.

The first glass manufacture in America dates back to the first glass furnace erected about a mile from the colony of Jamestown, Va., in 1607. The next attempt was at Salem, Mass., in 1639. Many glass-makers started business during the next two centuries, including the famous Sandwich Glass Works on Cape Cod, but all of them made glass by hand until Michael J. Owens, an employee of the Libbey Glass Co., in Toledo, Ohio, now a plant of the Owens-Illinois Glass Co., patented his famous bottle-making machine in 1899. Today, one Owens rotary machine can turn out as many as 20,000 glass containers a day, making possible the production of millions of sturdy light-weight containers needed to package foods, drugs, beverages and other essentials to modern living.

Nicholas Appert experiments with food processing, receives award from Napoleon. Below, Owens rotary glass-making machine turns out 20,000 containers a day to package drugs, foods and other essentials.

ILLUSTRATIONS, OWENS-ILLINOIS GLASS CO.





PHOTOS, I. WARSHAW COLLECTION

You would see why we have label legislation if you could read the uses for Warner's Log Cabin Extract—everything from frost bite to cholera. A stove polish bottle, an early Lydia Pinkham and other old bottles.

The glass package, however, to be efficient had to have a closure to protect the contents. It was the air-tight closure that was to provide the means for preserving food from season to season in sealed containers. During the Napoleonic wars, so many French soldiers were dying from scurvy and starvation rather than wounds, because their diet did not sustain them, that the French government made an appeal for someone to devise a method of preserving food for long storage.

This urgency inspired Nicholas Appert, a French confectioner, to experiment with food processing. Later he was rewarded by Napoleon for his method of keeping foods for long periods in sealed containers. His method was similar to the home canning of today. He sealed cooked meats, fish, fruits and vegetables in air-tight glass containers and immersed the containers in boiling water for varying periods. He knew nothing of bacteria, but his boiling-water bath was the means for preventing the growth of bacteria that Pasteur discovered half a century later to be the agent of food spoilage.

Nicholas Appert's sealing compound was reputed to be a cement made of cheese and powdered lime, which hardened rapidly and resisted both heat and water. The porcelain-lined zinc closure for use on home preserving jars was developed late in the 19th century. The invention of Owens' high-speed glass-making machines necessitated the development of closures that could be applied at high speeds to the mass-produced bottles and jars. The development of modern hermetic seals and vacuum caps thus followed the machine-made glass containers and is an innovation of our own century—a development even now being improved.

First use of metal containers for preserving foods was revealed in English patents taken out in 1810 by Peter Durand. Shortly thereafter tins of foods were sent to the British Army and Navy for trial during the Napoleonic era. It is recorded that the Duke of Wellington tried the beef preserved this way and had a message sent back home saying that he "found it very good."

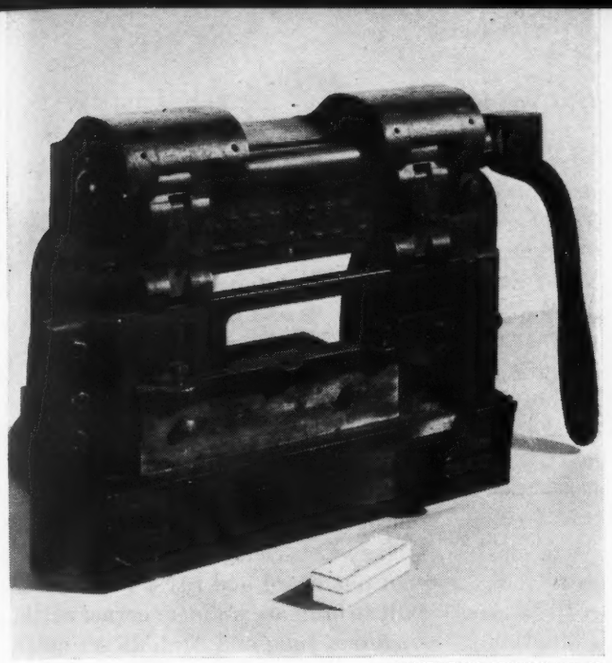
It is believed that William Underwood started the first American canning operations in Boston in 1819, using Appert's procedure. In 1820 both Underwood in Boston and Thomas Kensett in New York were producing canned foods commercially. In 1853 Gail Borden perfected the process for the manufacture of condensed milk which saved the lives of thousands of babies.

Large-scale canning in America began, however, during the Civil War. Armies have to be fed and just as World War II demonstrated the importance of the highest type of protective packaging for K and C rations, the Civil War demonstrated the advantages of hot processed foods in metal cans.

Today cans probably carry more of the world's food supplies than any other one type of container. Foods preserved in cans may be eaten years after they are canned with the assurance that they are in as good condition as when they were processed. Nicholas Appert and other pioneers of the canning industry would stand in amazement if they were to visit a modern canning plant to see mechanically made cans rolling down assembly lines, filled and sealed at speeds of 150 a minute —sometimes as fast as 300 per minute.

The origin of paper and paperboard harkens back to the ancient Chinese and to the Egyptians, who discovered that the fibres of the papyrus plant which grew along the banks of the Nile could be compressed into a sheet of papyrus or paper. The predecessor of paperboard was "book-board" made by early printers for the covers of their handmade books. These were formed by laboriously pasting together layer on layer of scrap paper, "laminating" as it would be called today, and hence the derivation of the word pasteboard.

The first hand-made paper mill in America was established in 1690 by William Rittenhouse on Wissahickon Creek, Germantown, Pa., because the publishers of the time didn't want to take the chance that political



ILLUSTRATIONS, DENNISON MFG. CO.

One of Andrew Dennison's first box-making machines—the corner cutter and scorer. The principle of this machine is still standard today in box-making factories.

Col. Dennison making set-up boxes by hand at his cobbler's bench at family homestead in Brunswick, Me. This laborious process led him to invent the machine for box-making.

conditions might interrupt the supply from England.

The Fourdrinier machine for paper making was patented in France on January 18, 1799, by Nicholas-Louis Robert, but the original machine was taken to England by Henry and Sealy Fourdrinier, improved and patented April 20, 1801, under their name.

The first Fourdrinier machine in the United States was installed in a mill in Columbia County, New York, in 1827. At that time, however, the Fourdrinier machine was not used for making paperboard. Paperboard was being made by hand, either by pasting sheets together as the European printers had done for bookboard or by pouring a heavy layer of pulp mixture onto a hand mold.

Several mills in New England were making such board by hand about 1800 and among other things it was used for the making of hat boxes, jewelry boxes and boxes for beads used by the ladies of the day for their hand-made bead work. Some of these boxes, excellently preserved, are in existence today in the collections of the Metropolitan Museum in New York; the Atwater Kent Museum and Friends Historical Assn. in Philadelphia and others. The boxes are all hand made in the style of the set-up boxes of today, paper covered, pictorially designed—sidelines of the hatmakers and jewelers.

Paperboard was first made mechanically on a cylinder machine. First successful installation was in 1831 in the plant of George A. Shyrock near Chambersburg, Pa. The use of the Fourdrinier machine for board manufacture was not made until 1910–11, when The Hinde & Dauch Paper Co., installed such a machine in its mill at Sandusky, Ohio, for the manufacture of strawboard—a significant occasion, since it meant the subsequent employment of the Fourdrinier machine on a tremendous scale for kraft board production in the South.

What was known in its day as a "paper of tacks" is generally regarded as the grandfather of the folding carton. Appearing about 1850, because of the difficulty of handling a pile of tacks, it was formed by winding a sheet of board by hand around a wooden block or mandrel. One end was then folded in and secured with a pasted-on label. The mandrel was removed, the box filled with tacks, the other end folded in and the whole tied with string. It is believed that the "paper of tacks" closely resembled the present-day carton of carpet tacks.

One of the early makers of folding cartons was Robert Gair of Brooklyn, printer, paper merchant and manufacturer of paper and paperboard specialties. The cartons were made by scoring the blanks individually, piling up 20 or so at a time and cutting the flaps with some kind of guillotine knife. One day in 1879 while examining a seed envelope job that had gone wrong in his plant, Gair discovered a way to cut and crease folding box blanks automatically. The type on the printing plates for the seed envelope job had cut through the paper. This suggested to Gair the method of replacing printing plates on a press with rules and knives which would crease and cut the box blanks—the basis for folding carton manufacture today.

The principle for making corrugated board, it is said, dates back to the invention of fluting irons, similar to those used to form the kind of ruffs worn by Queen Elizabeth and her court. First patents for corrugated board were taken out in 1856 in England, but it was not until 1871 when A. L. Jones took out a patent in the United States for an unlined corrugated sheet to be used for packing glass, especially lamp chimneys, patent medicines, beverages, etc., to replace straw and excelsior that corrugated materials received much consideration. In 1874 Oliver Long obtained a patent for lined single- and double-faced corrugated board. Other names that appear among the corrugated pioneers are those of Henry D. Norris, Robert H. Thompson and Robert

Gair, originator of the company which today bears his name. In the beginning, however, no containers were made of corrugated material. It was used only as a packing material. Demands for lighter weight cartons of good structural strength, however, at that time led to the development of the corrugated shipping container, made on the principle of the folding carton. It was not until 1903 that corrugated containers were accepted in official freight classifications as shipping boxes for cereals and it was 1906 before formal acceptance was given to them generally as freight containers.

The solid fibre container, which played such an important part in the weatherproof box development for World War II shipments, did not appear until about 1904. Yet its multi-ply construction of layer on layer of paperboard is remindful of the original "book-board" which the early printers made from scrap.

Handmade paperboard boxes were made in China for packages of tea in the early 18th century. Records show paperboard boxes used for pills, confections and face powders in England early in the 19th century.

First commercial development of set-up boxes in the United States, however, is credited to Aaron L. Dennison brother of the founder of the present Dennison Mfg. Co., Framingham, Mass.

He was a jeweler in Boston and his first boxes were made with jack knife, rule, pastepot and wooden frame. The boxes were for himself and other Boston jewelers, who had previously used boxes imported from Germany.

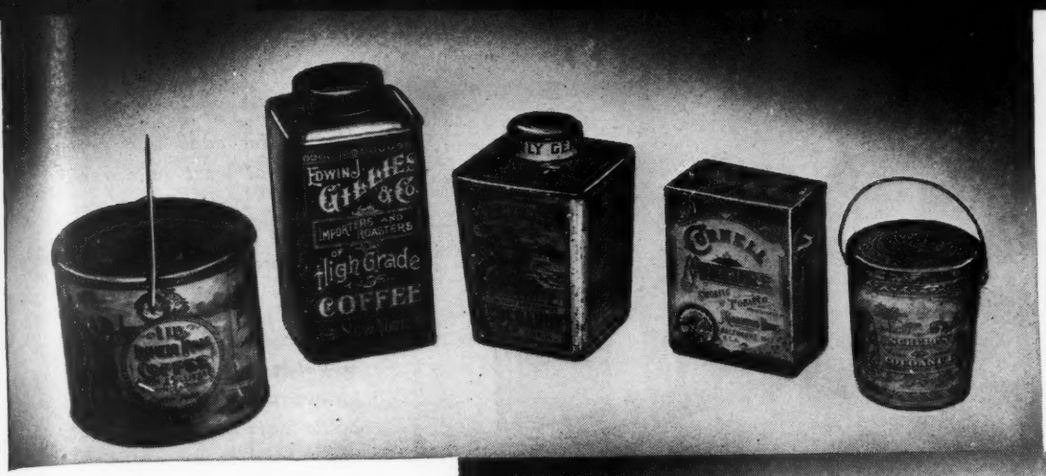
Aaron, however, was interested in jewelry and the idea of machine-made watches. His father, Col. Andrew Dennison, on the other hand, was looking for a new occupation to take the place of his declining cobbler's trade. It was arranged that the father take over the box-making business at the family homestead at Brunswick, Me., where Col. Dennison would make the wood forms and cut out board and cover paper on his cobbler's bench with an ordinary knife for corner cutting and scoring. Daughters Julia and Matilda set up the boxes by shaping them over the forms and covered them. In 1844, Col. Dennison wrote his son in Boston that they had made five gross of boxes a day, but complained of the slowness of cutting the boxes by hand. During the same year he developed his famous hand-operated corner cutter machine that cut one corner from one end of a box blank and one score in the blank. Principle of this machine is still standard in box factories.

Letters exchanged between the elder Dennison and his son indicate that box sales grossed about $1900 in 1846 and that prices ranged from 3 to 6 cents apiece.

E. W. Dennison, the Colonel's youngest son, entered the business about 1848, eventually took it over from his father in 1855, and was responsible for building up the box business and the famous line of tags, labels and seals for which Dennison Mfg. Co. is famous today.

Nobody knows who invented the paper bag. It is probably the descendant of the paper cornucopia. About 150 years ago it was a standard item for grocers and seedmen to package the loose products they sold—beans, sugar, flower, coffee, potatoes—at a time when these commodities were sold in bulk. The bags were laboriously hand made by retailers in the back room

Two photos from the files of Automatic Scale Co. show filling lines at turn of the century. "Gibson" girls are filling cans of spices. Similar equipment is shown in use for filling bags of Edwin J. Gillies coffee.



Lithographed metal containers of 19th century for coffee, cocoanut, tobacco. Lunch pail container at left, put out by Gillies, was for children to carry lunch in after coffee was used.

Collection of old boxes. Most amusing is the promotional copy on corset box. Says the maker: "I do not advise any woman to wear a corset, but if she will do so —and she generally will—I advise her to use one of Ball's Health Preserving Corsets as it is less likely to do her injury than any with which I am acquainted."

PHOTOS, I. WARSHAW COLLECTION

during their spare time from special rolls of paper.

Then, in 1852, an enterprising man in Bethlehem, Pa., Francis Wolle, was granted a patent for a machine that would make bags.

About the same time other bag machine inventors appeared in Boston—Whitney and Priest. In 1869 Pioneer Wolle, his brother Augustus, S. E. Pettee, F. W. Leinbach and L. Whitney Jr., formed the Union Paper Bag Machine Co. This group which owned all bag machine patents and leased machines on a fee basis controlled 90% of the paper bag business in the United States. Today the Union Bag & Paper Corp., lineal descendent of that combination, turns out 25,000,000 paper bags a day in one plant in Savannah, Ga. And paper bags may be made moisture-resistant, greaseproof, to hold a hundred pounds of hot chemicals and protect their contents from immersion in salt water.

The making of metal foil dates to antiquity. It is believed the Chinese made foil by pouring metal into thin slabs; then, by hand pounding, changed the slab into a leaf or thin sheet. At any rate many early tea packages were wrapped in foil. Some of the earliest patents for rolling machines to make tin and lead foils were those of the Germans and Italians. Among the earliest American records is that of Richard Cooks, who started with a small foil manufacturing business in 1858, using foreign patents upon which he made improvements.

An interesting sidelight is the story of John Paul Jones' body. When the remains of America's first Naval hero were exhumed in Paris at the turn of the century where they had rested since 1792, the body was found packed in hay and straw with tinfoil wrapped around the limbs.

One of the big names in the manufacture of foil for packaging, of course, is that of R. S. Reynolds, who during the second decade of our century became interested in rolling foil for his uncle's cigarette business.

Among the first to introduce the rolling of aluminum foil in this country was a Dr. Lauber, a German, through the Connelly Foil Co. of New York. Later this company, with other foil manufacturers, was absorbed by the Reynolds Metals Co., which by 1927 had about six foil mills in operation.

First American patents for collapsible tubes were issued to John Rand in 1841. The tubes were used by Devoe & Raynolds Co. for "colors in oil" or artists' paints. Machine production of tubes, however, developed in France and Germany. Plans for the first equipment to make tubes mechanically were brought to this country in the '70s by Herman Wirz, one of the

Gunpowder cans that probably went west in covered wagons. Round boxes were for shoe polish; the square ones were for cake tobacco.

PHOTOS, I. WARSHAW COLLECTION

Appetite appeal is not new, as picture of tomato on catsup bottle indicates. The Nestle's baby food is an old timer.

founders of the present A. H. Wirz, Inc., of Chester, Pa. One of the early products in these machine-made tubes was a beauty aid known as cucumber jelly. Among the early products that had a great deal to do with the widespread use of collapsible tubes was Colgate's toothpaste, still one of the leading users.

The first transparent film for wrapping packages came to this country from Europe in the early '20s. It was called "fenestra" paper and considered so valuable it was locked up in safes at night. Little was it realized then what an impact this new "see-through" material was to have on packaging.

The real story of transparent packaging in America begins in Buffalo, N. Y., when du Pont erected and put into operation in 1924 the first plant designed to manufacture cellophane that had formerly been imported from France. Sylvania Industrial Corp. began making cellophane in 1929, using a Belgian process.

This was the beginning of whole new conception of packaging. During the depression years, visibility packaging gave a new merchandising "shot in the arm" to sluggish business.

Cellophane was followed by other transparent films: cellulose acetate films and sheets in 1930 and at about the same time the development of ethyl-cellulose sheet and film and the first of the vinyl-type films and Pliofilm. Every manufacturer who could possibly put his product into a transparent package demanded the visible con-

This little boy is probably one of country's best known trade characters. His famous Uneeda Biscuit package has just been changed to meet the modern demand for pictorialization of contents on wrap.

tainer or wrap. Everything from bread to grand pianos was wrapped in transparent packaging. The war put a stop to it, when these materials went to the fighting fronts, but the zest for transparent packaging is back—all the way from the demand for nearly a hundred varieties of cellophane to the rigid drawn containers made from transparent plastic sheets and the elaborate molded and fabricated containers from acrylics.

"Celluloid" (cellulose nitrate) made for billiard balls by John Wesley Hyatt in 1869 is usually considered the first plastic material.

Only during the last 20 years, however, has the use of plastic materials in packaging assumed a role of importance, particularly in the wide use of resinous compounds for coatings and laminations that give protective and decorative qualities to other materials, for the films and sheets mentioned in a previous paragraph and for the millions of plastic closures used on glass containers, as well as for many types of molded containers used in the cosmetic, drug and other fields of packaging.

The year 1899, when the National Biscuit Co. took crackers out of barrels and put Uneeda Biscuits into paperboard cartons treated to resist moisture and folded around a waxed paper liner, is usually regarded as the outstanding date marking the transition from the inefficiency of bulk merchandising to that of modern consumer unit packaging. The pre-Uneeda Biscuit era is thus known as the "cracker barrel days."

Actually there was a considerable amount of unit-packaging in the cereal field before that date. The recent redesign of Quaker Oats packages (MODERN PACKAGING, March, 1946, p. 127) reveals that Quaker Oats were in square consumer-unit cartons sometime prior to 1886, one of the first packaged cereals.

It was H. P. Crowell, associated with the American Cereal Co., a predecessor of the Quaker Oats Co., who grasped the merchandising opportunities for advertising Quaker Oats to the housewife. Such advertising presupposed in place of the community barrel, the use of small packages on which the maker could print brand.

Grocers who purchased oatmeal in bulk from the lowest bidders resisted these (*Continued on page 172*)

DATES TO REMEMBER IN PACKAGE HISTORY

1607 First glass furnace in America, Jamestown, Va.

1690 First paper mill in America established by William Rittenhouse at Germantown, Pa.

1801 Fourdrinier paper-making machine patented in England—although originally patented, 1799, in France by Nicholas-Louis Robert.

1809 Nicholas Appert awarded prize by French government for method of preserving food by canning.

1810 First English patents for use of metal containers to preserve foods taken out by Peter Durand.

1819 William Underwood started first commercial canning operations in America.

1819 Bass Otis introduced lithography in United States.

1827 First Fourdrinier machine installed in America in Columbia County, N. Y.

1831 First cylinder machine for making paperboard installed at Chambersburg, Pa.

1841 Collapsible tube patents granted to John Rand—tubes used for Devoe & Raynolds artists' paints.

1844 Col. Andrew Dennison made first set-up box-making machine.

1850 Appearance of "paper of tacks"—the "grandfather" of the folding carton.

1852 Francis Wolle, Bethlehem, Pa., granted patent, for bag-making machine.

1856 First patents for corrugated packing material, taken out in England.

1858 Earliest record of foil manufacture in America—Richard Cooks using German and Italian patents.

1869 John Wesley Hyatt made first plastic later known as Celluloid.

1870 (Circa) Herman Wirz brought plans from Europe for machine production of collapsible tubes in United States.

1871 A. L. Jones patents for making corrugated board in America.

1874 Oliver Long patents granted for making lined single- and double-faced corrugated board.

1879 Robert Gair discovered mechanical method for cutting folding carton blanks.

1886 (Circa) Quaker Oats appeared in handmade square cartons.

1899 Rotary glass-making machine patented by Michael J. Owens.

1899 End of Cracker Barrel Era—National Biscuit Co. put Uneeda Biscuits in consumer unit packages.

1904 First appearance of solid-fibre container.

1906 Formal acceptance of corrugated containers for freight shipments.

1908 Dr. L. H. Baekeland developed Bakelite (phenol-formaldehyde plastic).

1910 Fourdrinier machine installed by The Hinde & Dauch Paper Co., Sandusky, Ohio, for board manufacture.

1924 Du Pont erected cellophane plant at Buffalo, N. Y.

1925 (Circa) Molded phenolic used for collapsible tube caps.

1927 Reynolds Metals Co. launched large-scale program of aluminum foil manufacture.

1930 Cellulose acetate film and sheet made for packaging purposes.

12 trade names reduced to 1

Pyrene finds advantages of streamlined advertising, sales and packaging outweigh the value of brands long-established in fire extinguisher field

Boldly discarding 11 trade names used for almost 30 years to identify its line of fire extinguishers, the Pyrene Manufacturing Co., Newark, N. J., has adopted newly designed, informative labels in various colors to distinguish its different products. Only the "Pyrene" trade name has been retained. Each type of extinguisher is now identified by the color on its name plate.

This pioneer move is only part of a new merchandising program undertaken by the company. The idea of identification by color is being carried through to recharge packages. Containers and shipping cartons for recharges have been redesigned, and each type of recharge has been assigned a color which ties in with the color on the label of the extinguisher for which it is to be used. The plan also includes the use of a new "Profit Kit" display designed to promote the sale of recharges along with the fire extinguishers.

1—Pyrene Co.'s old and new name plate on 2½ gal. foam extinguishers. "Fastfome" trade name has been discarded in favor of "Pyrene Foam." Red background of new embossed metal plate identifies it as foam type. Redesign program included abandonment of 11 long-used trade names for informative labeling and use of five different background colors to distinguish types of extinguishers.

The thought behind the dropping of such well-established trade names as "Phomene," "Guardene" and others was to simplify the company's advertising and sales problems. With the expansion of their advertising activities, the company wanted to drive hard on the old Pyrene name and not make it confusing to readers by asking them to remember a variety of trade names and establish in their minds the significance of each.

Furthermore, it was considered desirable that each type of extinguisher carry its generic term so that users who are not familiar with the trade names but who know the best type of extinguisher for different classes of fires can more readily identify the extinguisher to use.

Workers in an industrial plant, for example, have been told that a foam extinguisher is approved for Class B fires in flammable liquids and Class A fires in ordinary combustibles. They might not have been aware that a Phomene extinguisher was a foam type, but there certainly can be no doubt about a "Pyrene foam extinguisher."

Red is the dominating color used on the name plate of the foam-type extinguisher. Selection of a recharge for this type of extinguisher may now be made by the identifying red color of the recharge package for the foam-type extinguisher recharge.

Long-established trade names are usually considered a merchandising asset. But this company believes that the change to the use of a single trade name, uniformity of label design and distinction of products through the medium of color will prove helpful to the maker as well as the user. The program was developed through the combined effort and cooperation of an independent industrial designer, the company's advertising agency and the company itself. Benefits are already becoming apparent in increased sales volume.

One by one, eighteen different fire extinguishers were brought on the market during the years the firm has been in existence. The first was given the Pyrene trade name. New trade names were chosen at random when new types were developed until a heterogeneous group of 12 accumulated. A careful analysis led to a breakdown of the company's products into five basic groups. This enabled a comprehensive program for identifying each group by color. Red, blue, maroon, green and light blue are the distinguishing colors for

(Page 116)

them, and informative labeling differentiates between the variety of extinguishers in each group.

The following list shows the extent of the simplification in identity of the extinguishers and the recharge packages by color:

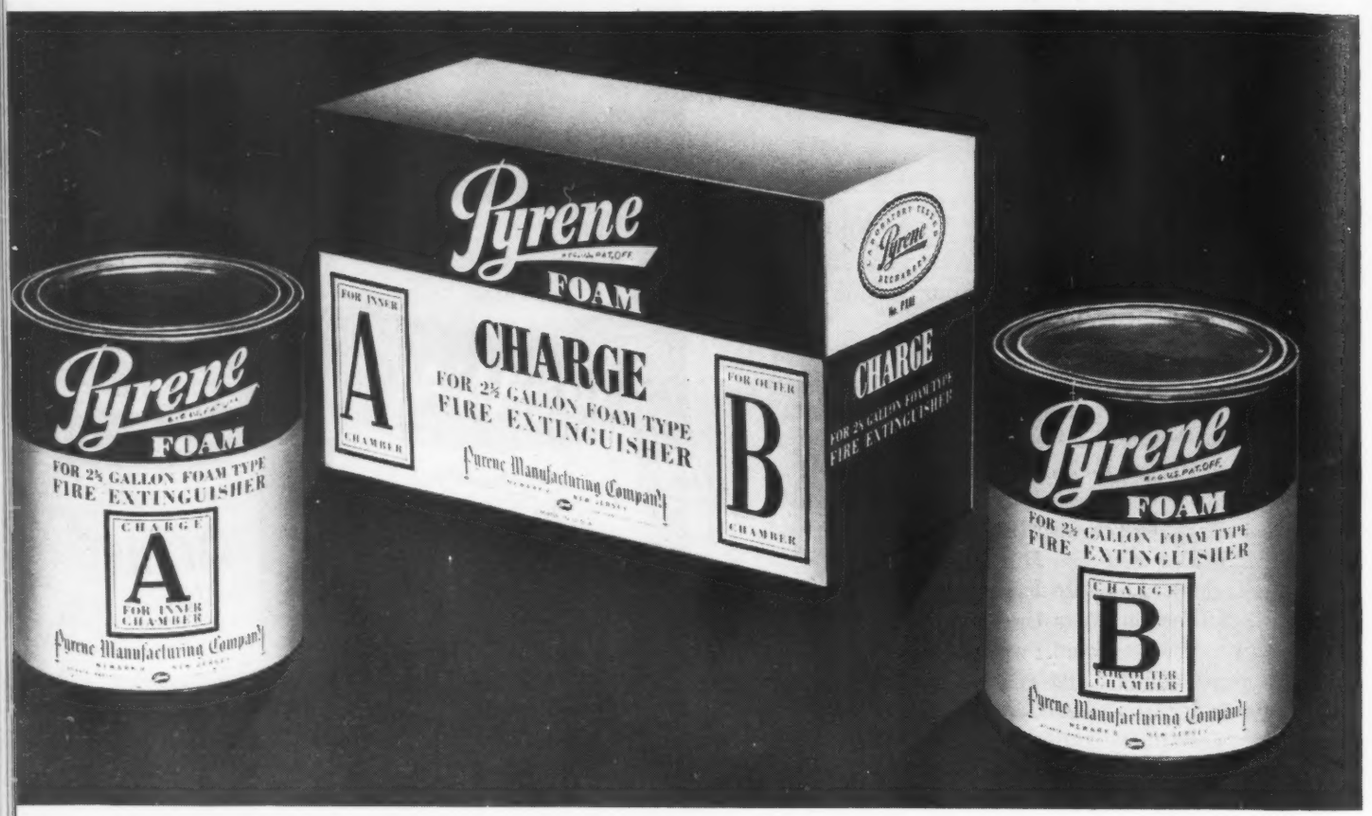
Old Name	*New Name*	*Color*
Pyrene	Pyrene—Vaporizing Liquid Type	Maroon
Essanay	Pyrene Soda-Acid	Blue
Guardene	Pyrene Soda-Acid—Four Star Drawn Shell	Blue
Fastfome	Pyrene Foam	Red
Phomene	Pyrene Foam—Four Star Drawn Shell	Red
Minute Man	Pyrene Foam—Automatic	Red
	Pyrene Foam—Marine Type	Red
Phomaire	Pyrene Foam Playpipe	Red
	Pyrene Foam Maker	Red
	Pyrene Foam Hip Pack	Red
	Pyrene Foam Knapsack	Red
	Pyrene Foam Basket	Red
	Pyrene Foam Proportioning Tank	Red
Phomaide	Pyrene Foam Compound	Red
Accurate	Pyrene Steel Pump Tank	Green
Duragarde	Pyrene Copper Pump Tank	Green
Wintergarde	Pyrene Anti-Freeze—Cartridge Operated	Green
Hydrogarde	Pyrene Water Type—Cartridge Operated	Light Blue

In selecting the colors to be used, care was taken to choose five which would blend and be harmonious on the retail store shelves. Chemists prepared the colors according to formula, assuring an exact duplication of shade on re-ordering and identical matching inks for the extinguisher labels and the recharge packages.

One of the first considerations involved in the new program was to introduce a uniform trademark—one

2—Redesign of recharge packages carries out ideas applied to extinguisher name plates. "Essanay" refill is now "Pyrene Soda-Acid." Blue color identifies new refill can as soda-acid type, replacing black and white of old can. The large over-all checkerboard pattern is now the uniform design for all of the recharge cans and cartons.

3—Display designed to promote sale of refills along with extinguishers. Paperboard back fits into slot provided in wood base. Small hand-size extinguisher is braced in a slanting position to the right; recharge can, left, rests on base. Promotion pamphlets are in the center.



4—Red coloring of foam recharge package corresponds to color on foam extinguisher nameplate. Checkerboard pattern is used on outer carton; "A" and "B" letters prominently displayed. For lithographed can in carton, checkerboard pattern is not used in order to afford greater prominence to identifying "A" and "B" lettering. On display, cans remain in the carton; thus the variation from checkerboard pattern is not obvious.

which would be suitable for use on the name plate as well as on all packages and literature. The long-used oval shape for the trademark was retained, but the lettering was refined and the design standardized. The embossed and etched metal plates on all the extinguishers now carry this trademark. It is also the standard for the recharge packages, the company stationery and all literature and advertising matter.

No uniformity of design or coloring had been attempted on the old name plates. Most of the labels had a black background, with the embossed lettering uncolored. Others had two-color backgrounds; one box of the label might be black and another red. On another, the combination might be green and red. Lettering on the plates was not always consistent. The name plates of standard and premium extinguishers were not identical in appearance, but the buyer was not always immediately aware of why he was paying a higher price for a higher quality product.

The new name plates are consistent in design and vary only in background colorings which distinguish the types of fire extinguishers. In the top box of the new label appears the Pyrene name in clear, bold lettering and, in addition, the generic name of the fire extinguisher. Easy-to-read lettering in lower boxes gives instructions and cautions for use, together with information on recharging and maintenance.

Distinction between standard riveted shell and premium seamless shell apparatus was achieved through the use of the designation "Four Star Drawn Shell" and the addition of four stars on the name plate of the higher quality extinguishers. On the label, this appears at the bottom of the first box, just below the Pyrene trade name and type of extinguisher.

Photographs of the old and the new recharge packages show the improvement and sales appeal achieved through redesign. The outmoded packages have been replaced by modernized ones designed in color-identifying over-all checkerboard pattern. They convey a family likeness easily recognized as Pyrene products.

The chemicals for recharges come in two forms: liquid and dry. Each type of extinguisher requires a specific type of recharge. For the liquid, bottles are currently being used but they will soon be replaced by lithographed metal cans. In the case of a chemical foam extinguisher two different chemicals are needed for the dry recharge; each is packaged individually in lithographed metal cans, and the two are then packed in a folding box for retail sales as a unit.

The label design of all of the shelf packages is identical. A large over-all checkerboard pattern combining the identifying color with white is used. The Pyrene trademark appears in white at the top of the face of each package on a colored square of the checkerboard

design. Below, in a white square, is the generic name of the type of extinguisher for which the recharge should be used, printed in black. The company name appears at the bottom of the container.

The two chemicals in the dry chemical foam recharge package are distinguished by letters. The one marked "A" is for use in the inner chamber of the extinguisher and the one marked "B" is for use in the outer chamber. The outer carton is in checkerboard pattern, but it was not considered necessary to carry out the pattern for the two inner packages since these are not visible to the buyer. Here it was felt that prominent display of the "A" and "B" designations on the front panel and complete directions on the back panel were of more importance. The identifying color idea is carried out by a color band at the top of each of the inner packages.

Each side of the carton carries the Pyrene trade name and trademark, as well as the "laboratory-tested" symbol. On the back of the package are detailed directions for recharging.

In clean outline and striking appearance, the new containers are a great improvement over the old-fashioned dull red-and-black design.

The color identification idea has even been carried through to shipping cartons. Although they are not yet on the market, designs have been completed for identifying colors to appear on the shipping cartons so that retailers will know at a glance what type of extinguisher and what type of recharge it contains.

Promotion of the sale of recharges for extinguishers already in service was one of the principal aims of the new merchandising program. Playing up the idea that the Pyrene recharges are "laboratory tested" and tying up the sale of Pyrene recharges with the sale of Pyrene extinguishers are now fundamentals of the company's merchandising program. Each of the recharge packages now carries a symbol—similar in design to the trademark—oval in shape, with the Pyrene name in the center, bordered with the words "Laboratory Tested Recharges." Each of the metal name plates on the extinguishers carries information to the purchaser that he should "For Safety, Use Only Pyrene Laboratory Tested Recharge No. xxx." The "safety" theme is played up in promoting the sale of recharges.

Inaugurating the drive on the sale of recharges is an attractive display designed to hold one of the small-sized hand extinguishers, a recharge package and promotional booklets. The display is suitable for counter or window use, and is included with extinguishers, refills and advertising material sold to the retailer.

Of knockdown construction, the display has a wooden base and a background of heavy paperboard. The wood base has a natural wood finish, but there is a bright blue border around the edge carrying a series of the Pyrene trademarks linked together in a scroll design. The backpiece of the display also has a bright blue background with lettering in white and yellow. An extinguisher rests on the right side of the display and is held in an upright slanting position by means of a platform rest and an attachment on the backpiece. A bright red curved arrow swings from right to left, to point to the recharge bottle resting on the wood base of the display. Here, too, safety is the theme. Copy points out "Here is your Pyrene Protection—take it with you." It cautions against running out of refills, lest protection to life, family, home and property be lost. Promotional booklets are placed in the center.

The company reports that literally thousands of retailers who have not sold extinguishers before have bought the profit kits and are using the display to sell refills to present extinguisher owners and extinguishers with extra refills to many who want to protect their hard-to-replace homes and property.

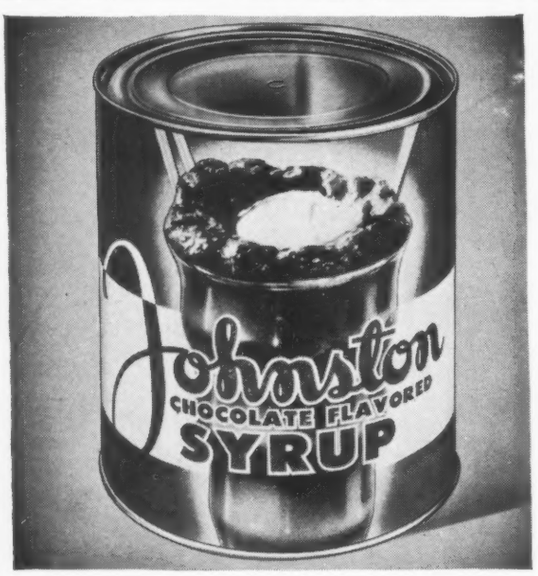
CREDITS: *Design program, Eugene J. Lux, New York. Package labels, Irvington Printing Co., Irvington, N. J. Lithographed cans, Crown Can Co., Philadelphia, Pa. Display, Ivel Corp., New York.*

5—*Old recharge packages varied greatly in type, design and coloring. Bottles for liquid refills are being replaced by lithograhed metal cans designed in checkerboard pattern. Two chemicals required to recharge foam-type extinguisher are designated by "A" and "B" lettering and packaged as a unit in a paperboard carton.*

PACKAGING

A merger of two food companies, each with its own advertised brands, Bennett's Foods and Mark's Prize Recipe Foods, into Recipe Foods, Inc., has resulted in a combining of the most familiar design elements of both labels in these redesigns so that retailers and consumers of either previous brand will recognize the new packages as related to the foods they know. Labels, H. L. Eikenberg, Baltimore, Md.

A pink, ruby-spangled telescope box introduces a brand new Matchabelli trio called Prince's Ruby. The gold metal lipstick carries out the Matchabelli theme in the shape of a coronet while the rouge is in the acetate case for which Matchabelli won the Charles S. Welch award in 1944 (MODERN PACKAGING, April 1945, p. 98). The third item is a sample box of powder. Each item fits into its own die-cut slot in the base of the container.



The Robert A. Johnston Co. is taking its fountain syrups out of the storeroom and making them up-front display merchandise with the addition of mouth-watering sundaes, sodas and malted milks in full color. Fountain operators are using the newly labeled products on the fountain to stress quality ingredients. Label, Milprint, Inc., Milwaukee, Wis.

For improved identification, the new design for Good Luck Jar Rubbers by the Boston Woven Hose & Rubber Co., Cambridge, Mass., has supplanted the old illustration with a four-leaf clover, increased the size of the brand name and simplified the design. A new bottom panel bearing the brand name assures product identity even when merchandise is stacked bottom end out. Design, R. G. Neubauer, Inc., Southport, Conn.

PAGEANT

Back on the market after limited production during the war years, Burnett's bottles of food colors are packed as a k't in a small folding carton with four die-cut openings. The four colors are identified by the color of the plastic caps which match the fluid in each bottle. All informative copy and directions appears on the carton. Carton, National Folding Box Co., New Haven, Conn. Bottles, Owens-Illinois Glass Co., Toledo, Ohio. Caps, Terkelsen Machine Co., Boston, Mass.

H. G. Disbrow, Madison, N. J., has invented a home-use carton opener merchandised by the International Safety Razor Corp. A printed card gives the three-dimensional effect of a carton. A slot holds the opener in position so that the package shows use of product.

West-Pax frozen-food locker kits in both pint and quart sizes are packed in large folding cartons printed in eye-catching green. Each kit contains 18 cartons, 19 Pliofilm bags, a carton filler and an instruction book. By selling these home-freezing aids in kits merchandising is easier for the retail outlet. Kit, Western Products, Inc., Chicago. Pliofilm, Goodyear Tire & Rubber Co., Akron, O.

An ingredient used in a sunburn preparation for Air Force flyers is the base of Sun Screen, a product of Sportsmetics of Chicago. The $3^3/_4$-oz. milk-glass jar with a black metal screw cap is silk screened in green. Design, Milton Herman Associates, Chicago. Silk screening, Screencraft, Inc., Chicago.

Black paperboard base and die-cut flocked platform holds the gold-fired bottle for Clyde, a new men's cosmetic. Black wooden closures and lettering applied to the glass add distinction. The caps are walnut covered with three coats of black and have long-skirt plastic screw caps inserted. Caps, Gibson Jones Co., N. Y. Labels, Perma Print, N. Y.

Black simulated alligator with a bright red top, or brown with emerald green are the color combinations for Helena Rubinstein's Poucho Kit of young skin preparations. Cleaner and the deodorant are in milk glass bottles; a plastic case with an embossed design holds the cake make-up and the lipstick is Heaven-Sent, in metal. The four items are suggested for gifting with special emphasis on the boarding school girl who will welcome the drawstring bag.

Romagoze, a different type of wickless humidifier and deodorizer manufactured by the A. D. Collins Mfg. Co., Inc., Brooklyn, is sold in two parts. A squat glass jar with a metal screw cap holds the cake-like substance which is the humidifier itself while the liquid used to refill the jar is in a brown stock bottle. Directions for use appear on the cap of the jar and on the back of the bottle.

PACKAGING

The new label for Atmore's Simple Simon Mince Meat recognizes the value of descriptive labeling in both copy and illustrations. The oval of the old label was adapted for the front of the new one plus a back panel with a full color illustration of a piece of mince pie. Around it are small pictures showing the contents plus a minimum amount of sell copy. Red brown and buff with touches of red is the color scheme. Labels, Muirson Label Co., Brooklyn. Jars, Hazel-Atlas Glass Co., Wheeling, W. Va. Caps, White Cap Co., Chicago.

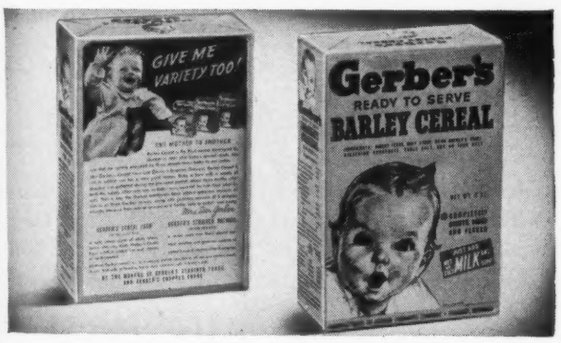
Sun-lovers will welcome the new Daggett & Ramsdell sunburn lotion, Sunshade, a clear rosy colored liquid. The oval bottle carries a rose tan label which blends with product color. Directions appear on the back of the label and are read through the liquid. Copy on the face of the label is white and brown.

PAGEANT

The Prang Textile Kit, a set of textile color paints for home or institutional use, is being marketed by the American Crayon Co., Sandusky, Ohio. Developed prior to the war, shortages of materials prevented widespread distribution but the kit is now reaching trade outlets in greater quantities. The set-up box design is suggestive of the uses of the stencil materials—bottles of color, stencils, paper, knife and brush. Booklets of instructions and suggested technique complete the kit. Design, Emmy Zweybruck, New York. Bottle, Owens-Illinois Glass Co., Toledo, Ohio.

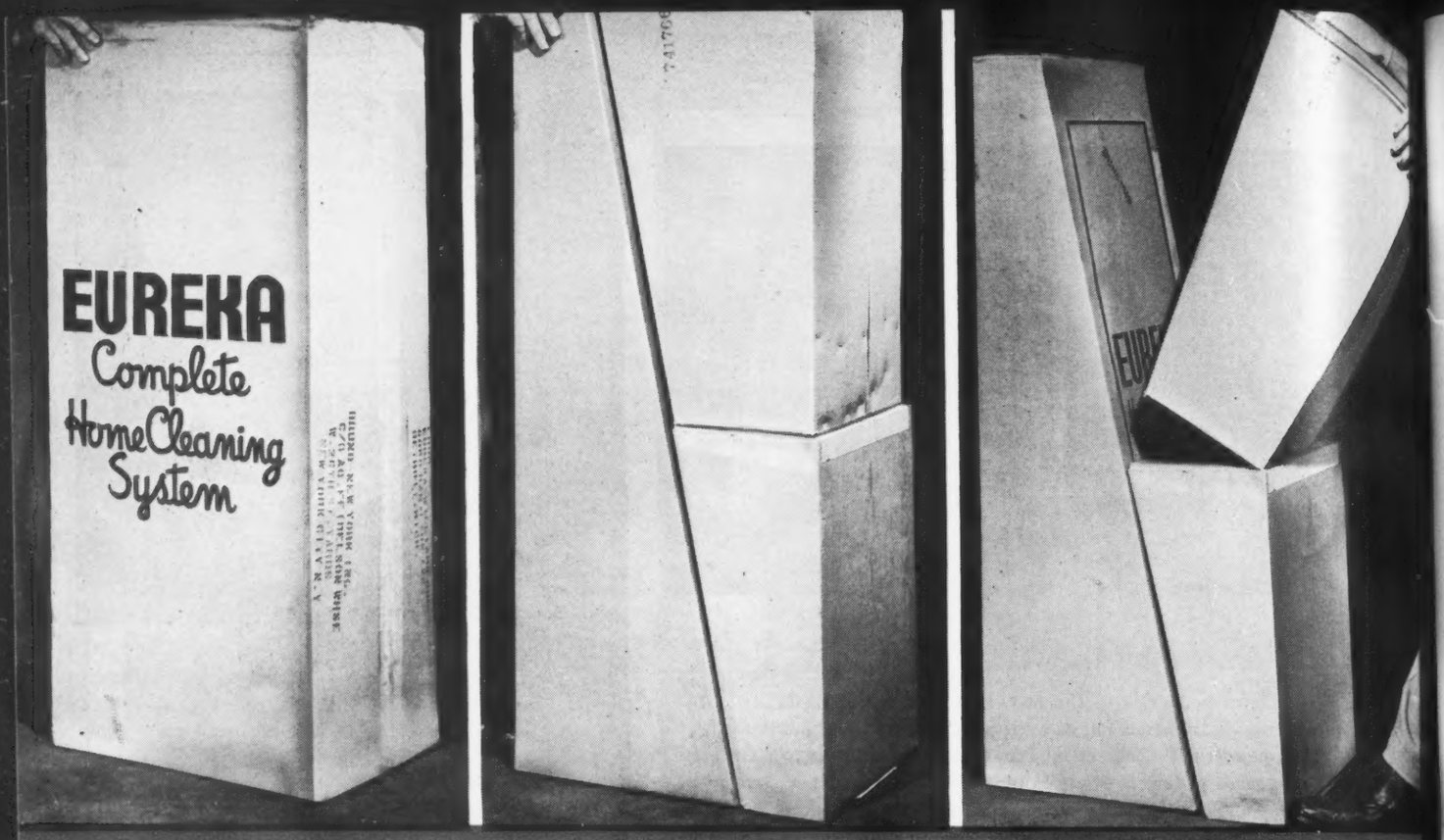
Bachman Bakeries of Reading, Pa., packs its Carmelized Cocktail Stix, a new pretzel item, in re-usable 1½-lb. tins with red and yellow color scheme. Natural color illustration of the product adds appetite appeal. Similar large tins are being adopted by the company for other pretzel products.

An improved formula and a redesigned package (left) were introduced simultaneously by General Foods for Sure-Jell, a pectin powder. A deep red against a yellow background and modernization of the product pictures improves shelf-appeal of the new cartons. Design, Frank Gianninoto & Associates, New York.



A third cereal has been added to the Gerber's baby-food line—ready-to-serve barley cereal. The yellow tight wrap distinguishes it from its sister products which are in red and blue. Design elements, however, follow the generally recognized pattern of the other two boxes. Design, Egmont Arens, New York.

The Scotch plaid label on the Helen Ann food line has been lithographed on the metal screw caps to improve the eye-appeal of the packages and make them stand out more boldly on self-service store shelves, according to Charles Wagner & Bros.; New Orleans food packers. Closures, Crown Cork & Seal Co., Baltimore, Md.



1 *Upright vacuum cleaner, tank cleaner and attachments for both are packaged as one unit in master shipping container of corrugated board.*

2 *Three irregularly shaped containers inside master container are so constructed that they fit together to conform to the shape of outer box.*

3 *The largest of the three irregular containers holds the upright cleaner, the medium-sized one, the tank cleaner, and the smallest one, the attachments.*

Package promotion

. . . sells two vacuum cleaners and a tool kit at one throw

The Eureka Vacuum Cleaner Co. asked 21,000 women what today's housewife wants in the way of cleaning equipment to lighten household tasks.

Their combined answers showed the need of the complete home cleaning system which Eureka is now offering in one big package containing an upright-type vacuum cleaner, a tank-type cleaner and attachments that may be used interchangeably on both types.

This packaged home cleaning system is the basis for the company's postwar merchandising program and is the culmination of a long-range study of consumer cleaning habits made during the war years when there were no new vacuum cleaners to sell. In test areas the company reports about 70% of sales in the complete three-unit packaged system.

More outstanding, however, from a packaging angle are the physical aspects of this carefully engineered, factory-to-consumer pre-pack, one of the first of its kind to reach the civilian market since the war and one which indicates the trend to efficient, compact, economical, lightweight shipping units in the field of home electrical appliances. Distributors and dealers welcome such units for their convenience, labor-saving advantage and protection from breakage. They can sell from a floor sample and ship the complete pre-pack, received from the manufacturer, direct from warehouse to consumer without repackaging.

The Eureka package is entirely of corrugated construction. The outer container or master box, measures $46^{3}/_{4}$ in. by $15^{1}/_{8}$ in. by $19^{5}/_{8}$ in., is rectangular in shape and identified as "Eureka Home Cleaning System," and sealed with craft tape (Fig. 1). When this outer container is removed, there are inside three irregular-shaped corrugated containers. The largest of these ($46^{1}/_{4}$ in. by $14^{1}/_{4}$ in. by $13^{5}/_{8}$ in. by 4 in.) contains the upright cleaner; the second one ($24^{1}/_{4}$ in.

by $14\frac{1}{4}$ in. by 13 in. by 8 in.), the tank cleaner and the third ($21\frac{1}{8}$ in. by $13\frac{3}{4}$ in. by $8\frac{5}{8}$ in. by $4\frac{1}{8}$ in.), the attachments or cleaning tools (Figs. 2 and 3). These three irregular-shaped boxes are so constructed that when fitted together, they form a three-dimensional rectangular shape meeting dimensions of master unit.

Inside the three irregular-shaped boxes the cleaners and parts are held securely in place with properly scored, die-cut and stapled pieces, which give protection from shock at all points (Fig. 5). For example, a scored tray-shaped piece of corrugated board at one end of the container for the upright cleaner holds the plastic base of the cleaner in position. Above this is a hollow box-like scored piece held together with metal staples that prevents movement of the cleaner handle and bag forward or backward in the box and also helps to absorb shock. Specially cut pieces of corrugated board wedged in vertically keep the motor and brush part of the cleaner from riding up and down. The tank-type cleaner is held in its shipping case by means of scored pieces of corrugated board that surround the unit. A die-cut slot it provided to accommodate the carrying handle. To prevent the possibility of scratched surfaces, cellulose wadding is packed around all points of contact.

The third unit containing the tools has been designed with die-cut opening to hold each piece. For convenience this unit is also provided with a carrying handle.

The Eureka packages, completed at the factory, need not be opened until they reach the home of the consumer. Each unit and part is subjected to some 15 inspections and operating tests before packaging to assure perfect performance on arrival in the home.

The days of direct selling in the vacuum cleaner field are over, according to Eureka. Most sales today are made through distributors and their dealer outlets. The packaged Eureka Home Cleaning System is thus planned by the company to assist distributors in the merchandising of these products. The selling aids include sound slide films, window displays and promotional literature all based on the idea of selling the two vacuum cleaners and tool kit in one package.

CREDIT: *Containers, Hinde & Dauch Paper Co., Sandusky, Ohio.*

4 *Each of the boxes is identified with trade name and the name of contents printed in maroon. Gummed kraft tape is used to secure the flaps. The box for tools has a convenient carrying handle for re-use purposes.*

5 *Cleaners and parts are held securely in place by means of scored and die-cut pieces of corrugated board, which give proper cushioning and protection from shock. Prepack can go from factory to consumer without opening.*

DISPLAY

1

1 The familiar 3-in-One trademark, greatly enlarged and cut out of metal, forms a space-saving display dispenser for this well-known household lubricant. Holding one dozen cans, the dispenser is intended for a permanent display to be replenished from stock as needed. A metal hanging tab answers the problem in stores with little counter space but ample empty wall space. Design, Margery Markley, New York.

2 Three views of a new 3-product counter merchandiser recently developed for Frederick Stearns & Co. In each, the body part of the counter merchandiser is the same. The change from one product to another is effected by changing the display card which locks in die-cut openings on the top of the display, and by changing the products on the shelves. The construction, a combination of die cutting, scoring and concealed locking arrangements, makes the merchandiser extremely rigid with a minimum of finishing expense—only one gluing operation. Display, Forbes Lithograph Mfg. Co., Boston, Mass.

2

3 The figure of the girl forms an effective backdrop for the new Gaby suntan oil display being used this year in both Canada and the United States. Six bottles of the lotion, three of each size, rest in front of the girl on a raised platform. A die-cut holder keeps the bottles upright and holds each in its separate place. The entire unit is easel mounted and can be used either for counter or window decoration. Display, Ketterlinus Lithographic Mfg. Co., Philadelphia, Pa.

4 The Leonard Jewelry Co., Inc., uses these easel-mounted cards to display its line of wrist watch bands and anklets. Adaptable to both window and counter, the unit acts as a silent salesman because the carded merchandise can be de-

(*Page 126*)

3

GALLERY

tached easily by the customer. The display is simple to set up but at the same time achieves a three-dimensional effect by showing the merchandise in a slanted position. Design, E. Leonard Koppel, New York City.

5 This is one of a series of six displays developed for RCA Victor Electron tubes to promote the dealer's radio repair department, with actual copy about the tubes subordinated. The easel-mounted die-cut bell ringer is reproduced in full color and the unit may be used either as a counter piece or for the window. Display designed and produced by Hussey-Woodward, Inc., New York.

6 Philadelphia Whisky's "Heritage" series of displays continues with a reproduction of the first steamboat on trial run at Philadelphia in 1787. Reality is achieved through the use of a curved back plane showing the steamboat, the river and the city in the distance. Forward of this scene, two planes recreate the excitement along the shore. The tray, the bottle and glasses are in still another plane at the lower left. The entire display including the frame is printed in full color for spectacular eye-catching appeal. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

7 A very much modernized Puritan maid is spotlighted on both the 4-oz. heat-sealed cellophane bags and display carton for Puritan Marshmallows, a product of The Shotwell Mfg. Co., Chicago. Since the news about the product is the fact that the candies are fortified, this information is spotlighted on the container along with more detailed information on the nutritional value of the marshmallows in comparison with other foods. Display cartons, Container Corp. of America, Chicago. (*Page 127*)

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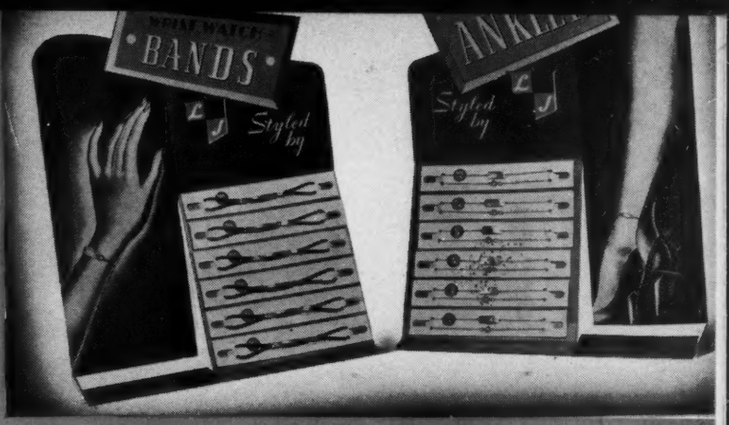

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7

6

1—*Licking the problems of packaged preservation of fresh produce is a continuing challenge to the best minds of the packaging industries. Shown in one of their frequent conferences at Columbus, O., are (left to right) Frank McGeough, head of Columbus unit of A&P Food Stores; James C. Morris, of the Ohio Boxboard Co. and J. Duncan Rankin, of the Du Pont Co.*

PHOTOS 1, 6, 7 AND 8, THE GREAT ATLANTIC & PACIFIC TEA CO.

Produce pre-packaging

2. Protective requirements and practices in N. Y. and New England

*by M. P. Rasmussen and H. Platenius**

(This is the concluding section of a two-part report on a survey of existing pre-packaging practices in the New York and New England area. Part I, in the July issue, discussed the general aspects of operations by commercial pre-packers, retailers and wholesalers. The authors stress that this is a preliminary, fact-finding survey, with no attempt at final conclusions or recommendations. All of the firms cooperating were assured that information would be treated confidentially; no names, therefore, are mentioned, and illustrations have no direct connection with the subject matter.—ED.)

Advantages that have been claimed for pre-packaging are as follows:

1—It permits the sale of vegetables and fruits in sizes of packages that meet more nearly the needs of the consumer.

2—It lends itself to retailing in self-service stores and reduces the number of clerks needed in the produce division.

3—It protects produce against damage and deterioration in transit and in the retail store.

4—It reduces waste that results from sorting and reconditioning in the retail store.

5—It eliminates some of the work involved in preparing vegetables for the table and for cooking.

6—It reduces transportation cost in those instances where the trimming and packaging can be done at the shipping point.

7—It stimulates sales because of the attractive appearance and the convenient size of the packages.

Discussions with the trade made it evident that there is considerable difference of opinion as to the merits and the relative importance of these claims. Distributors stressed the saving in labor and waste in the retail store. They expressed the opinion that these savings are sufficient to offset the cost of materials and labor involved in pre-packaging at the warehouse.

Some of the processors engaged in preparing pre-packaged spinach and salad mixes stressed the convenience to the consumer. There was little agreement, however, concerning the extent to which preparation of vegetables for kitchen use should go. No reliable information is available which would show how much the consumer is willing to pay for such services.

Rate of deterioration of pre-packaged vegetables

Contrary to some statements, pre-packaged vegetables do not necessarily maintain their eating quality better than vegetables sold in bulk. In fact, certain vegetables are rendered more perishable by pre-packaging than they were before. This is particularly true for peas and lima beans that have been shelled, and also those vegetables that have been sliced or diced. On the other hand, some vegetables (potatoes and root crops, for instance) maintain their quality better if handled and sold in pre-packaged form. One chain store representative stated that it was the saving realized in handling pre-packaged potatoes that led the

* Professor of Marketing and Professor of Vegetable Crops, respectively, New York State College of Agriculture, Cornell University, Ithaca, N. Y.

firm to experimenting with the pre-packaging of other kinds of produce.

Although there is a need for much experimental work to determine how pre-packaging affects the quality of vegetables, it is possible to make certain deductions from experiences in the trade and from results of experiments dealing with causes of deterioration of vegetables.

Because of the wide difference in structure, chemical composition and physiological behavior, each particular vegetable presents a different problem. Leafy vegetables deteriorate primarily because of wilting, which can be controlled by packaging in moistureproof containers; sweet corn, peas and asparagus lose quality as a result of rapid sugar losses, which can be checked only by proper refrigeration and speedy marketing; root crops and potatoes suffer from bruising and to a lesser extent from shriveling. Nearly all vegetables are subject to storage diseases, which develop most rapidly during exposure to high humidity and high temperature.

Wrapping any vegetable in a moistureproof cellulose film results in pronounced changes in the physiological functions of the vegetable. The atmosphere within the wrapper becomes saturated with water vapor almost immediately. This reduces wilting to an almost negligible degree, and herein lies the principal beneficial effect of pre-packaging, insofar as quality is concerned. The saturated atmosphere thus provided, however, offers excellent conditions for the development of molds and bacteria, which may offset any advantages otherwise gained. Furthermore, the cellulose film interferes with the normal gas exchange of the vegetables, which may result in sub-oxidation, off-flavor and mustiness of the product. Peas, sweet corn, asparagus, and to a lesser degree, all leafy vegetables are subject to sub-oxidation. The only means of avoiding this undesirable process in pre-packed vegetables is by maintaining temperatures of from 32 deg. to 40 deg. F., from the time they are packaged until they are used by the consumer.

It is not the high carbon dioxide content within the package but an insufficient supply of oxygen that causes sub-oxidation. To overcome this difficulty, some processors are closing the cellulose bags by stapling instead of by heat-sealing, and some retailers are going so far as to punch holes in the film in order to admit air. While either practice may reduce the danger from sub-oxidation, it must be recognized that anything that makes for free circulation of air likewise increases the rate of moisture loss and wilting, and thereby tends to defeat one of the purposes of pre-packaging.

There is also a possibility that deterioration of highly perishable vegetables in cellulose films is caused by the accumulation of undesirable gases, such as ethylene and certain esters which in themselves produce off-flavors.

Still another technical difficulty encountered in pre-packaging is due to oxidation processes (which may occur even in the absence of oxygen) causing a browning of the surface. Freshly cut surfaces and bruised tissue are particularly subject to oxidation.

2

PHOTO, PACKAGE MACHINERY CORP.

2—*Typical of well-designed Eastern packages are these used by D'Arrigo Bros. and Continental Provision Co. Note cut-away side of celery tray and simple U-boat form used to package cauliflower.*

PHOTO, UNION BAG & PAPER CORP.

3

3—*Simplest type of package offering visibility, frequently used where refrigerated display cases are not available, is the kraft bag with window. This bag is made of a wet-strength paper.*

It has been found troublesome in pre-packaged cole slaw and head lettuce. Keeping the pre-packaged vegetables at temperatures below 40 deg. F. reduces the rate of these oxidation processes decidedly. There is also some likelihood that rinsing these vegetables in a dilute solution of some anti-oxidizing agent may elimiate this trouble. Chemicals which might be tested for this purpose are ascorbic acid, glutothione, citric acid, tartaric acid and sodium bisulfite.

Refrigeration

Nearly all of those engaged in handling pre-packaged vegetables stress the need for prompt and consistent refrigeration of highly perishable products. In fact, the lack of adequate temperature control during the summer months is the principal reason why most processors discontinue the handling of pre-packaged vegetables, which are particularly perishable. The pre-packaging of spinach, cole slaw and salad mixes is at present carried on only during the winter months from October to April. All processors agree that pre-packaging of these highly perishable items on a year-around basis must wait until refrigerated show-cases and refrigerated trucks become available in sufficient quantities.

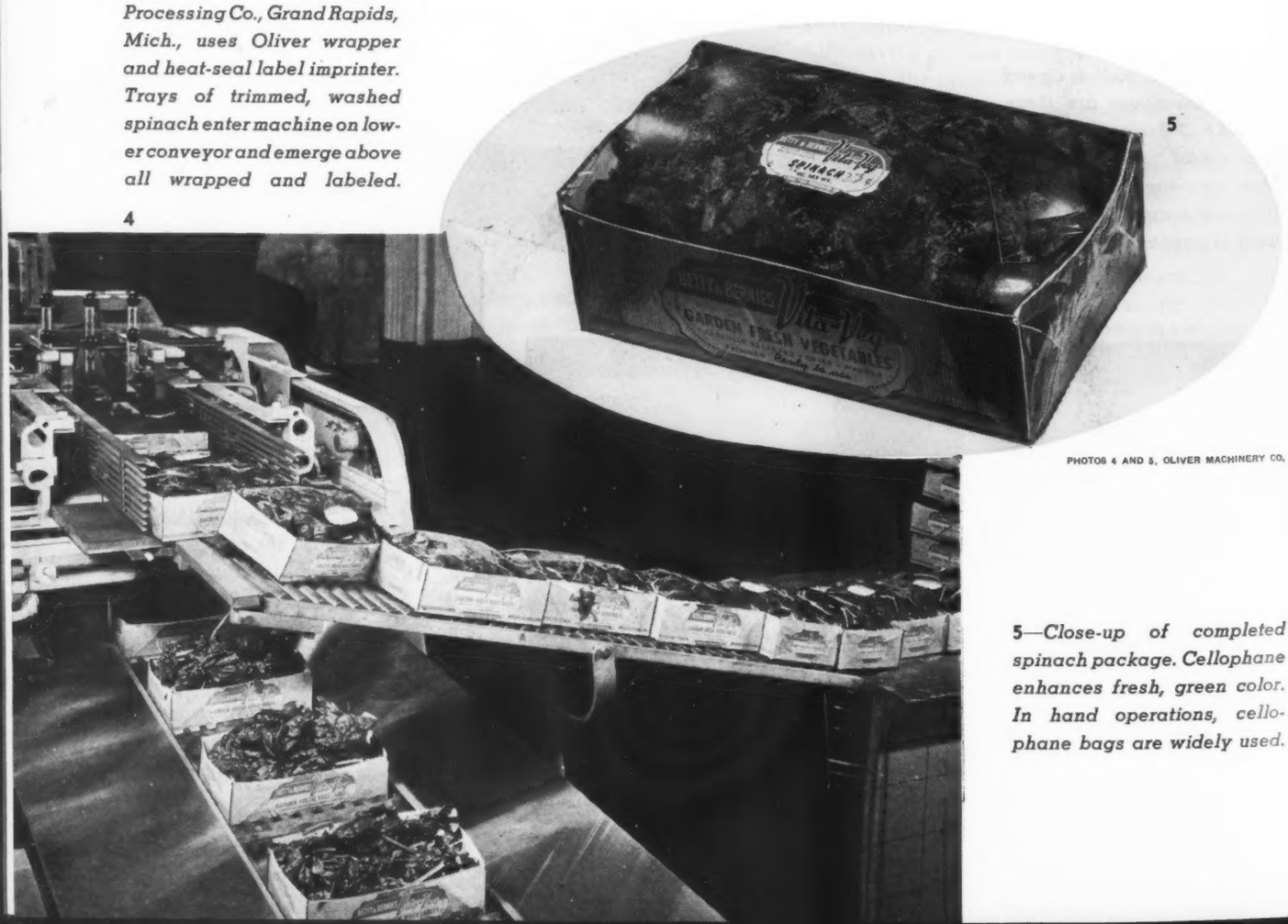
It should be pointed out that refrigeration adds materially to the handling cost. One grower in central New York who has shipped pre-packaged sweet corn under refrigeration to New York City for several years reports that during the war the net return to him was not larger than for sweet corn shipped in the conventional way. He believes, however, that it is profitable to pre-package sweet corn in times when corn is cheap. It has also been reported that pre-packaged sweet corn could be delivered in excellent condition and at a good profit where the corn was grown near the distributing centers so that the corn could be sold the same day that it was picked.

Many of the claims made for superior quality of pre-packaged vegetables should probably be attributed to improved handling methods and to careful refrigeration. Some go so far as to state that the trend toward pre-packaging is sound and desirable primarily because it forces the industry to employ methods of pre-cooling, truck refrigeration, refrigeration in the warehouse and retail store. It should not be overlooked, however, that the expense involved is considerable. Careful studies are necessary to determine whether or not the extensive use of refrigeration reduces waste materially and whether the improvement in quality is sufficient to offset the higher cost.

There is some misconception as to the need for refrigeration of different vegetables. Although the number of vegetables requiring refrigeration is large, on a tonnage basis they represent only about 20%. Putting tomatoes, peppers, eggplants, sweet potatoes, onions and cucumbers in a refrigerated show-case may actually cause an acceleration of deterioration of these

4—Typical mechanized packaging operation at Lyons Food Processing Co., Grand Rapids, Mich., uses Oliver wrapper and heat-seal label imprinter. Trays of trimmed, washed spinach enter machine on lower conveyor and emerge above all wrapped and labeled.

4



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PHOTOS 4 AND 5, OLIVER MACHINERY CO.

5—Close-up of completed spinach package. Cellophane enhances fresh, green color. In hand operations, cellophane bags are widely used.

6—*Improved type of sturdy paperboard box, overwrapped with transparent film, used by A&P Columbus unit this year for Tennessee strawberry pack. Corrugated shipping container was specially made. Strawberries are one of the most difficult fruits to package for preservation.*

particular products. In Table I (tentative) are listed vegetables that lend themselves to pre-packaging, and their respective temperature requirements.

Methods of pre-packaging

There is no pre-packaging method which can be used uniformly for all products. Potatoes and onions are usually pre-packaged at the farm or at the country shipping point. Tomatoes and celery from the South or California are usually pre-packaged at plants located in or near the large cities. Spinach, cole slaw and salad mixes are mostly put up in plants which make the pre-packaging of these items a specialty. They are all located in or near large distributing centers. The pre-packaging of all other fruits and vegetables is at present carried on only on an experimental scale. The work is done either in the produce warehouse or in the retail store. There are no reports of successful shipments of pre-packaged vegetables on any considerable scale from the South or California to Eastern markets.[1]

Procedures for pre-packaging spinach, cole slaw and salad mixes are well standardized, and they vary only in minor details and in degree of mechanization.

[1] Ed. Note: Some growers have been making regular air shipments of pre-packaged produce items from the West Coast. See "Produce by Air," Modern Packaging, Nov. 1945, p. 96. These shipments have apparently been successful, but whether or not they can be termed of "considerable scale" is a matter of opinion.

TABLE I—TEMPERATURE REQUIREMENTS FOR PRE-PACKAGED VEGETABLES

Refrigeration essential	*Refrigeration desirable*	*No refrigeration required*
Asparagus	Celery	Cucumbers
Peas	Beets	Pink tomatoes
Lima beans (shelled or unshelled)	Cabbage	Potatoes
	Snap beans	Sweet potatoes
	Rhubarb	Onions
Head lettuce	Broccoli	Peppers
Spinach	Cauliflower	
Greens	Ripe tomatoes	
Cole slaw	Carrots	
Salad mixes	Parsnips	
Soup mixes		
Sweet corn		

Bulk spinach received by rail in refrigerated cars is hauled to the plant and the baskets are dumped on a grading table where the spinach is roughly sorted, then trimmed by tearing off roots and base of the plant. The spinach is then carried via conveyor belt to a washer, which is in most instances similar to a celery washer. One operator used a drum-type washer. The spinach is next transferred by hand to a dryer, also called extractor. The dryer operates on the principle of a centrifuge and is of the same type as used in commercial laundries. The spinach is put into the dryer either loose or packed in mesh bags. With most of the surface water removed, the spinach is next dumped on a belt or table for further sorting, and finally bagged by hand in cellophane bags. Wide-mouthed metal funnels are used to facilitate the filling of the bags. Small scales are installed along both sides of the table so that each bag can be filled with the desired quantity of spinach (usually 10 oz.). Finally the bags are closed by stapling or by heat-sealing. Some bruising occurs during these operations and experience has shown that only Savoy spinach that is not unduly succulent can be used for pre-packaging.

Vegetables for salad mixes, soup mixes and cole slaw are first trimmed, then sliced or diced mechanically, put into a rotary mixer and finally packed in the same way as is spinach. One operator was found who packs all vegetables except spinach in cardboard boats which are over-wrapped with cellophane in a packaging machine.

Most other vegetables and fruits were packed in cardboard boats of different design, shape and size, then over-wrapped with cellophane in a packaging machine. Some operators, working on a strictly experimental scale did all wrapping and sealing by hand. The impression was gained that hand wrapping is slow and inefficient. The most experienced and successful operators stressed the need for specialized equipment which will reduce the need for trained labor. A machine that will fill and weigh automatically such products as spinach and salads would be especially helpful.

Moistureproof cellophane is used exclusively for bags and for over-wrapping cardboard boats on which

7 *7—Apple and peach bagging machine, developed by Food Machinery Corp., has been used experimentally by A&P, Columbus. Fruit is placed in large revolving drum and flows into four funnel-like arms. A "stop" on each arm can be adjusted up or down to regulate number of apples per package.*

the vegetables and fruits are placed. A few vegetables, head lettuce and cabbage, were wrapped individually by hand in sheets of cellophane. Some processors are seeking a film which eliminates condensation (fogging) on the inside of the film. It did not seem to be generally known that condensation of moisture on the film could be avoided by thoroughly cooling the packages to a temperature near the freezing point and, thereafter, raising the temperature slightly during subsequent handling, avoiding always a second drop in temperature. Many operators are anxious to experiment with different types of films. The ideal type of film would be one that permits sufficient gas exchange to prevent sub-oxidation and one which at the same time maintains a relative humidity of 95 to 98% within the package. Obviously, different types of films will be needed for different kinds of produce and for different temperature conditions.

There has been considerable experimentation with cardboard boats for a variety of vegetables and fruits. Most operators agree that cardboard boats used at the present time are not altogether satisfactory. The ideal boat should have rigidity and low side walls to provide maximum visibility. A possible solution may be a pressed pulp tray which is waterproofed on the inside. Because of their high cost, plastic trays cannot be considered at the present time, although they are ideal in other respects.

It should be mentioned that some kind of cardboard boat is required for any product that is to be wrapped in a packaging machine. For some vegetables a single strip of flat cardboard is sufficient.

Most processors of pre-packaged vegetables and fruits use flat cartons of heavy fibreboard as shipping containers (master cartons) with a capacity of about 12 individual packages, which are packed in a single layer. Shipping containers of this kind give the packages adequate protection and can easily be stacked. They have one serious disadvantage, however. During the cooling period, which is required for most products before they are delivered to retail stores, heat transfer through heavy cardboard walls is slow and considerable deterioration is caused before a sufficiently low temperature is reached. Although no data on cooling rates are available, it is estimated that 8 to 10 hours are required for cooling when cartons of this type are used. It is possible that this problem can partly be solved by using ventilated shipping containers similar to those used for shipping day-old chicks. Cooling in such cartons would be more rapid, but reheating during the period that the produce is delivered to the store would likewise be accelerated. Ventilated cartons should probably be used only where store deliveries can be made within a very few hours or where refrigerated trucks are used to make such deliveries. Wire-bound crates, used by a few processors, also permit rapid heat transfer, but do not give the product the same protection against physical damage as do the fibreboard cartons.

Packaging machines

Reasonably suitable packaging machines have been developed that over-wrap packages of different sizes and shapes. The cost of such a machine is about $5,000. Capacity as high as 100 packages per minute has been reported. Further improvement of these machines is to be expected. At the present time, manufacturers have a backlog of orders for many months.

All packaging operations can be carried out by hand. It is the general opinion, however, that packaging by hand is slow and inefficient. Hand-packaging is recommended only for distributors who wish to carry out pre-packaging on an experimental scale. Most operators agree that the trend is toward greater use of mechanical equipment.

Reducing waste by pre-packaging

Much has been made of the argument that pre-packaging reduces waste encountered in marketing vegetables and fruits. An analysis of the sources of waste make it questionable, however, whether much can be expected in this respect. Certainly there is not much saving involved if broccoli, cauliflower, or head lettuce is trimmed at the warehouse instead of in the kitchen.

It is merely a question of whose garbage pail is to be filled. Incidentally, pre-packers have to pay for the removal of refuse like everyone else. There would be a considerable saving in transportation and container costs if pre-packaging were carried out at the farm or at the country shipping point. Thus far, however, it has not been demonstrated on any substantial scale that pre-packaged produce can be shipped long distances successfully.

Another argument is based on the assumption that there is less waste from produce deteriorating on the counter. It is true that the shelf life of some products—carrots and celery for instance—is lengthened by pre-packaging. On the other hand, the shelf life of other products is actually shortened. Whenever savings of this kind have been reported, they can be attributed in part at least, to the use of refrigerated showcases and to the special attention that the produce division receives where pre-packaged vegetables and fruits are handled on an experimental scale. Even in such stores, a surprisingly large quantity of low grade and partly deteriorated pre-packaged produce was observed on the counter during this survey. All managers of super-markets agreed that a definite saving in waste does come from handling pre-packed produce in that it makes it impossible for the consumer to select only the best specimens of each product, leaving an inferior and unattractive portion to be discarded or to be sold at a greatly reduced price. Of equal importance, the damage caused to the produce by bruising by consumers in picking over the entire supply is greatly reduced. There is also a small saving in waste which comes from prevention of spilling such vegetables as spinach and snap beans during weighing and packing when sold in bulk in the store. A very important advantage is the fact that pre-packaging makes it easier to keep the appearance of the produce department neat and orderly.

How much saving in waste from handling pre-packaged produce can be achieved has not been determined satisfactorily. One chain organization reports that during one month the over-all waste in the store was reduced from 5 to 1% by shifting to the sale of vegetables and fruits in pre-packaged form. Such figures applied only to a single store. If such results could be obtained consistently throughout the year in a substantial number of stores, the economic advantage would be obvious.

Pre-packaging of specific vegetables

The following notes are based on experiences gained by the trade and on experimental data from different sources. Any recommendations given are tentative. No doubt, many of the suggestions offered will have to be revised as more experience is gained in this field.

Asparagus. Asparagus has always been sold in consumer-size packages as bunches. Additional steps may be taken by trimming off the unedible portion of the lower stalk and by wrapping the bunches in cellophane. One retailer claimed that asparagus wrapped in cellophane assumes a metallic appearance, thereby losing in attractiveness. The shelf life of asparagus can certainly be lengthened through wrapping, provided the bunches are kept constantly under refrigeration. Because of its high respiration rate, asparagus is particularly subject to sub-oxidation when wrapped and exposed to room temperature.

Snap beans. Snap beans lend themselves well to pre-packaging either in cellophane bags or in overwrapped cartons. Wax beans in particular make a very attractive package. The shelf life of snap beans is lengthened by pre-packaging. It is desirable, but not essential, to keep pre-packaged snap beans in a refrigerated showcase. There is a question as to whether snap beans should be prepared for use by washing and by snipping off the ends. It has been reported that snap beans prepared in this way are subject to mold infection. Studies should be carried out to determine whether or not this is the case.

Lima beans. Attempts have been made to pre-package shelled lima beans. It should be remembered, however, that shelled lima beans are probably the most perishable vegetable known. It is unlikely that pre-packaged lima beans can be handled successfully during the summer months without facilities for continuous refrigeration.

Fresh beets and carrots. These root crops are pre-

8—*Operator of apple bagger tilts arm with foot lever, releasing stop and allowing fruit to flow into cellophane bag. Second girl weighs and staples bag and staples on label containing weight and price. Four girls operating the machine can bag a bushel of apples per minute.*

packaged by removing the tops entirely or by leaving only 2 in. of the top so that they can readily be identified as fresh carrots. They are then packaged in over-wrapped cartons. The shelf life of these crops is definitely lengthened by pre-packaging. It appears that it is only a question of time before consumers accept beets and carrots with the tops partly or entirely removed. There is no advantage in wrapping only the roots, leaving the tops exposed. Root crops sold in this way deteriorate almost as rapidly as if they had not been packaged at all. It is desirable, but not essential, to keep pre-packaged root crops in a refrigerated case.

Broccoli and cauliflower. The tough stems are usually removed and the flower clusters are divided and packed in over-wrapped cartons. Small heads of cauliflower are sometimes wrapped in a sheet of cellophane without dividing the head. It is desirable to keep broccoli and cauliflower in a refrigerated case. Pre-packaging aids materially in retarding the wilting and discoloration of the product.

Cabbage. Early cabbage is occasionally wrapped in sheets of cellophane. The wrapper affords protection against bruising and wilting of the outer leaves, and seems to improve the general appearance of the cabbage.

Celery. The pre-packaging of celery, especially of celery hearts, has been practiced for some time. There is no advantage in wrapping only the lower end of the stalk. The shelf life of celery is materially lengthened by removal of the leaves and outer stalks and by complete wrapping. If packed in cartons, the side walls should be low so as to give maximum visibility. Some treatment needs to be found whereby the browning of the lower stalk can be prevented or, at least, be retarded. It is desirable to keep pre-packaged celery in a refrigerated show-case.

Cucumbers. Pre-packaging lengthens the store life of cucumbers somewhat. It also makes it possible to sell cucumbers in convenient-sized lots, marked as to weight and price, in a self-service store. Except during hot weather, there is no advantage in keeping cucumbers under refrigeration.

Lettuce. Head lettuce is sold extensively wrapped in sheets of cellophane. The wrapping affords considerable protection against wilting and the tearing off of the outer leaves. Reddening (rusting) of the butt end is the most serious problem. It is hoped that a convenient method will be found to eliminate this defect. Head lettuce should be kept in a refrigerated case at all times.

Dry onions. The pre-packaging of dry onions is primarily a problem of determining suitable sizes of packages for the retail trade. Paper bags, mesh bags and pager bags with cellophane windows are being used successfully. Where the turnover is reasonably rapid, onions do not require refrigeration.

Bunched onions. Bunched onions in over-wrapped cartons are being sold in some stores. It was reported that bunched onions become slimy when wrapped in cellophane more rapidly than any other product. They should, therefore, be kept in a refrigerated case.

Peas. Unshelled peas are pre-packaged in the same manner as snap beans. Because of the high respiration rate of peas, it is essential that they be held under refrigeration at all times. The pre-packaging of shelled peas has been attempted by at least one firm. Because of the slight bruising that peas undergo during shelling, they become highly perishable and subject to sub-oxidation when packed in cellophane. It seems questionable whether shelled peas can be pre-packaged successfully.

Peppers. Four to six peppers of uniform size, packed in an over-wrapped carton, make an attractive and convenient package. It eliminates to a considerable extent the sorting over by the consumer that is customary where peppers are sold in the bulk. The wrapper retards shrivelling of the peppers. Except during hot weather, peppers should not be kept under refrigeration.

Potatoes. Much research has already been done to prove the advantage of potatoes in consumer-size packages. As in the case of onions, both paper and net bags are being used. Idaho baking potatoes are occasionally sold in over-wrapped trays with 3 to 5 potatoes per package. Potatoes do not require refrigeration in the retail store.

Rhubarb. Short sections of rhubarb or entire stalks are packed in over-wrapped cartons. The wrapper keeps the stalks crisp. It is desirable to keep rhubarb in a refrigerated case.

Spinach. The packaging of washed and trimmed spinach has been one of the most promising ventures in pre-packaging. The procedure customarily used for this process has been described in detail previously. It should be pointed out again that the pre-packaging of local spinach during the summer has not been attempted, processors realizing that spinach during pre-packaging becomes highly perishable.

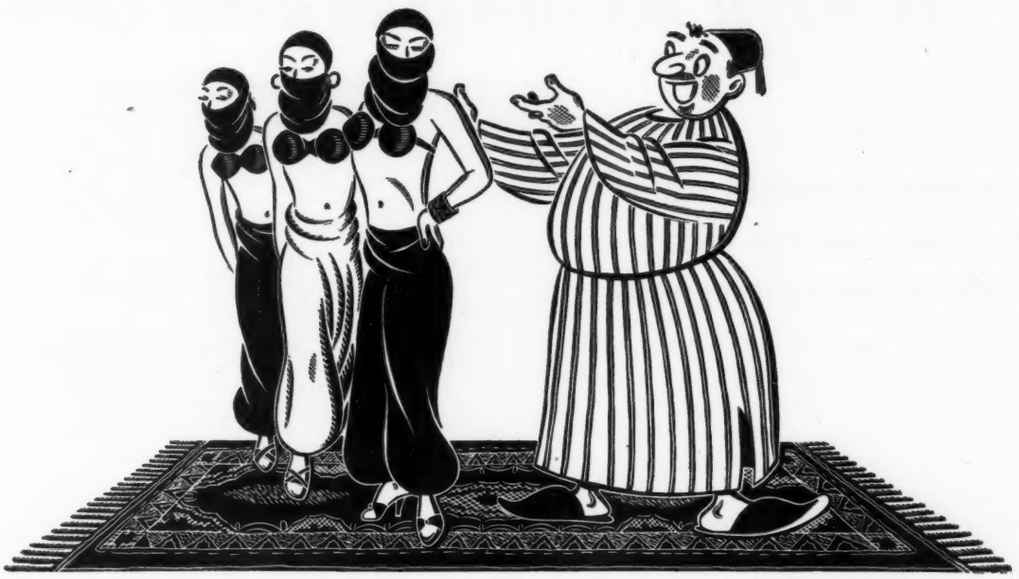
Sweet corn. Contradicting reports are obtained concerning the possibilities of handling pre-packaged sweet corn. On the basis of experimental work, it can be assumed that the shelf life of pre-packaged sweet corn is less than that of sweet corn in the husk. The pre-packaging of sweet corn can succeed only if the time between picking and retail selling can be shortened and if the corn is pre-cooled and held under constant refrigeration after pre-packaging. It is certain that the higher quality claimed for pre-packaged sweet corn was actually due to improved handling methods.

Sweet potatoes. Sweet potatoes are pre-packaged in the same way as potatoes. Sweet potatoes should definitely not be held under refrigeration.

Tomatoes. Southern tomatoes were the first product to be pre-packaged successfully. The pre-packaging of uniformly high quality local tomatoes during the summer and fall offers an excellent opportunity. Tomatoes, unless they tend to become overripe, should not be kept under refrigeration.

Chopped greens, salad mixes, (*Continued on page 166*)

what PRICE PRICE?



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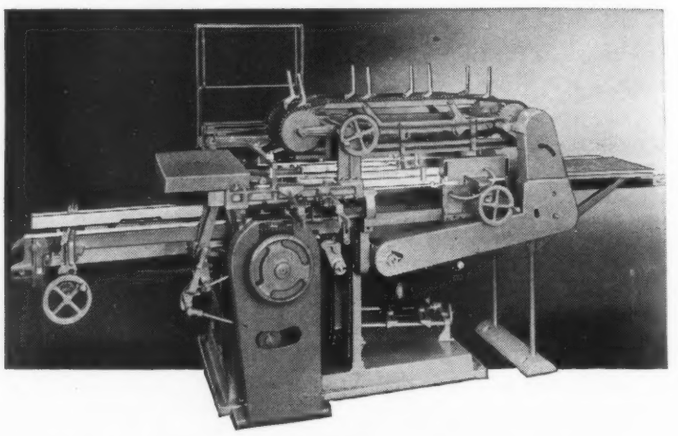

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Specialty papers . . . modern theory and practice

by R. H. Mosher*

Paper has long been looked upon as one of the ideal packaging materials because of its relatively low unit cost, availability, appearance, printability and ease of fabrication. The volume consumption of paper or board by the packaging industry, however, has closely paralleled the development of specialty sheets by the paper and paper-converting industry. From the cardboard cartons and manila and kraft bag stocks used in the early days of unit packaging through the development of asphalted board, waxed paper, glassine and parchment for limited functional usage, and down to the present synthetic resin-treated and coated sheets, packaging has taken products of the speciality paper industry and applied them to a wider and wider usage.

Although in many cases of modern packaging a sheet is still used which possesses few other properties than those imparted by the cellulose fibres, the greater part of the applications involve papers or boards which possess either functional and/or decorative values. A sheet of bleached kraft or sulphite, therefore, can be used to make an envelope, bag or box covering which can be printed and hold dry solids or smaller unit packages. Such a sheet could not, on the other hand, be used to hold moist or deliquescent solids, greasy and oily liquids or solids, or heavy and sharp-cornered objects, because the sheet would soon break down or the contents spoil. Papers and boards have been developed, however, which possess the properties required for such applications and they are now being employed in more and more packaging jobs where formerly glass, plastic, metal and wood were the only choices.

The properties obtainable in a plain board or paper sheet are to a great extent those of the cellulose fibre from which it was produced. The physical strength properties are dependent upon the fibre length and type, method of preparation, processing treatments and technique of sheet making. Since the sheet is composed of a fibrous structure with voids between the individual fibres, it is permeable to gases. This is especially true of water vapor, which can pass not only through the voids but also through and along the fibres themselves. The spaces between the fibres also serve to transmit fats, oils and grease, even though such materials are not compatible with the cellulose itself. Since the fibres are only felted together mechanically, they can be easily scuffed up from the sheet surface unless glued down by such a surface adhesive as starch or glue. Since these last materials are water soluble, however, they soon break down under moist rubbing conditions.

The chemical behavior, on the other hand, is dependent upon the fact that the sheet is composed of the chemical compound cellulose. It can be written upon or printed upon because it is receptive to water or oil-based inks. Since the cellulose molecule contains numerous hydroxyl groups, the paper is very water sensitive and hygroscopic. It will absorb water or water vapor, swell and, with sufficient water present, lose coherence and rapidly disintegrate under slight mechanical action. Cellulose does not soften and melt without decomposing, so the sheet cannot be sealed to itself at elevated temperature.

The production of a sheet possessing the properties required of modern packaging materials demands the addition of what are known as functional properties. These properties have been defined as those which are not generally associated with a sheet of paper or those which are not obtainable by the fibrous cellulose base itself. Such functions include greaseproofness, water resistance and wet strength, gas or water-vapor resistance, transparency, scuffproofness and heat-sealability. For ideal usage, the incorporation of such properties should not reduce strength nor diminish printability.

There are two general methods for preparing functional papers and each involves attempts to overcome the disadvantages inherent in the base cellulose sheet. The first procedure involves altering the form of the basic fibrous paper. The second, on the other hand, includes the addition of other materials in the form of saturants or coatings so that the resulting combination possesses the desired properties.

Base-sheet alteration: It is possible to impart limited functional properties to the sheet by altering the form of the cellulose fibre itself. By extensive beating and hydration of the fibres, such as is carried out in the preparation of a glassine sheet, a product can be obtained which has to a large degree lost its fibrous structure. In the resulting sheet the fibre-to-fibre bonding has been greatly increased, the amount of interfibre space has been drastically reduced, and a number of changes have been made in the direction of functional properties. The sheet is smoother, translucent, and

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has greatly improved water resistance and scuff resistance. The water-vapor transfer rate is still high, however, and under prolonged soaking the sheet does soften and can be disintegrated. The physical strength properties are greatly reduced because of the elimination of the fibrous structure. Such a sheet possesses excellent grease resistance when first produced, but recent data have shown that upon extended aging, even when plasticized, it tends to lose the water of hydration and thus its grease-resistant character disappears.

Another method of obtaining similar properties involves "parchmetization" or treatment of the base sheet with chemical agents which tend to gelatinize the surface of the fibres. Approximately the same functional properties are produced as in the glassine, except that the aging properties and the resistance to defibreing upon extended soaking applications are good and reduction in the strength properties is not as great.

The addition of the functional properties to these sheets is mainly due to the elimination of the fibrous structure with the accompanying reduction of the interstitial spaces. The gas and grease transmission can therefore be reduced to a very low value and the transparency or translucency of the sheet is greatly enhanced. The reduction of the fibrous structure also results in a sheet in which the fibre-to-fibre bonding has been altered in the direction of a cellulose-to-cellulose cohesive bondage, with a resulting decrease in water sensitivity of the sheet. In many cases, however, the reduction of the physical strength and the increased cost are such that the limited functional properties so obtained do not economically fit into the packaging picture.

Coating or saturating: The second, and more usual, method used to impart functional properties to the paper sheet or board involves a treating or coating operation using wax, asphalts, synthetic resins or natural high polymers. In most cases the converter obtains or produces a base stock which possesses the required physical strength and then by the proper treatment imparts necessary functional requirements.

There are two general types of sheets produced by such treating operations. The first appears when the added compound is thoroughly distributed throughout the sheet by means of a saturating or treating operation. The second type is obtained by a coating operation when the added compound is laid down on one or both surfaces of the base sheet. Various specific properties can be obtained using either, but some functions can only be obtained by one or the other treatment.

By treating or saturating the fibrous sheet with a solution of the desired resin or polymer, the sheet can be waterproofed and the scuff resistance and wet strength greatly enhanced. The polarity and type of solvent is very important, however, because the amount of swelling of the fibres determines to a great extent the properties of the resulting sheet. If the solvent used swells the cellulose fibres, the resin or compound can be carried into each individual fibre so as to saturate it thoroughly. With less polar solvents, the solution is merely carried into the sheet and surrounds each fibre with a film of the added compound. The resulting paper or board will shed water, but the grease, gas and water-vapor resistance will be unchanged, due to the continued presence of the interstitial voids. The solution generally contains a low solids content and the added material does not add much to the weight.

If the saturant is a synthetic or natural resin dispersion or emulsion, however, the properties will be different. Very little penetration of the individual fibres can occur, and the resin forms a film over and around each fibre. The voids can be to a great extent filled, and at the same time the resinous film covering the fibres tends to reduce water sensitivity. The physical strength properties, grease resistance, gas transmission resistance, scuff resistance, water resistance and transparency are generally improved. The water-vapor resistance and heat-sealability are not greatly altered and true water and greaseproofness not obtained. The added material appreciably increases weight of the sheet.

The use of a hot melt or wax as a saturant rounds out the picture of base-paper treatments. Such a material, thoroughly filling the voids present in the sheet, will produce complete greaseproofness, water resistance, scuff resistance, gas resistance and heat-sealability, and will greatly improve water-vapor resistance. Since, however, such treatments generally cause a stiffening of the sheet, any sharp crease or fold will cause the film to crack and destroy the functional value. There are a few products on the market which claim enough flexibility to withstand creasing, and such products should offer real advantages. As in dry waxing, however, the loose fibres projecting above the surface tend to act as wicks to transfer water vapor down through the sheet and out the other side. Also, the old adage concerning the weakest link holds very true here, since any break in the sheet will completely negate over a period of time the resistance present in the remainder.

There are other resins used for saturating, such as the polyester 100% solids type, asphalt, and the catalytically activated non-solvent resins, but these generally produce relatively brittle or limited functional sheets. The cost factor is also of importance in such an operation as saturating, because if the sheet has a high enough bulk for good saturation, the sheet can absorb a great deal of a saturant, the unit cost of which is appreciably greater than that of the base sheet.

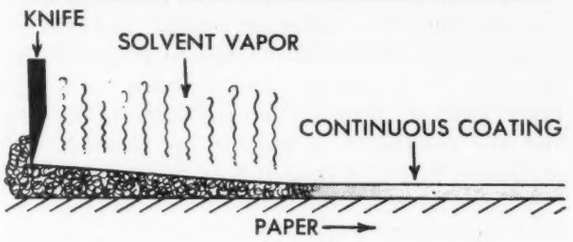
The second major procedure for imparting functional properties involves coating, or laying down a film on the surface to produce the desired result. There are a number of forms in which the coating can be applied, and each has advantages and disadvantages.

The applied coating can be composed of synthetic resins, natural high polymers such as proteins or starch, waxes, asphalt, and other chemical compounds of specific nature such as fungicides, self-sterilizing chemicals, rust preventives, etc. The applied films may be continuous or non-continuous, depending upon the properties required and the method of application.

The raw stock chosen by the converter here should also provide the physical strength properties required in

VARIOUS COATING TYPES AND THEIR CHARACTERISTICS

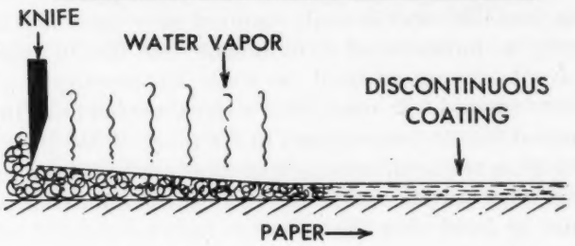
SOLVENT OR LACQUER COATING



❶

1—Solvent lacquer coatings provide continuous films with gas and water-vapor resistance, greaseproofness, heat-sealability and scuff resistance.

DISPERSION OR EMULSION COATING



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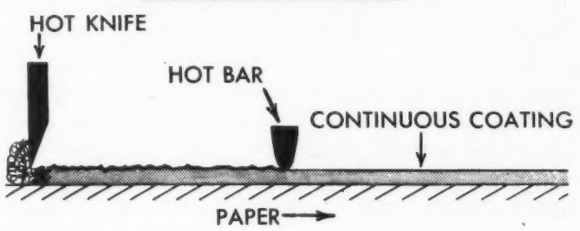
2—Water-borne emulsion or dispersion-type coatings have advantages in cost, non-flammability and non-toxicity, but also have certain disadvantages.

HOT MELT COATING



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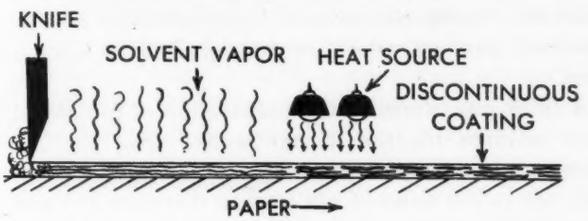
3—Hot-melt coatings can be based on synthetic resins, waxes, natural resins, asphalt and cellulose plastics. They usually lack strength and flexibility.

ORGANOSOL OR PLASTISOL COATING



❹

4—Organosols and plastisols produce relatively low-viscosity coating mixes at room temperature and use solvents that are considered relatively safe.

the finished sheet, since the applied functional coating may or may not augment them to any extent. When it is possible to do so the converter will use a base stock which has been previously pigment-coated or sized so that the applied functional film will remain on the surface and not sink into the sheet to any extent. The base sheet is also generally calendered so as to provide a smooth surface for the coating operation. The film should sink in just sufficiently to adhere tenaciously to the surface but no further than is required for anchorage, so as to conserve the relatively expensive coating composition. If necessary, the base sheet can be plasticized to provide sufficient flexibility after coating.

The oldest and best-known method involves the application of solvent coatings. (See Fig. 1.) Using this method and appropriate materials, continuous films can be laid down which offer gas and water-vapor resistance, greaseproofness, heat-sealability and scuff resistance. It is possible to incorporate almost any desired material into the applied coating. Using water as a solvent, proteins, starch and some synthetic resins can be used as the film formers. If other solvents are used, wax, synthetic resins, asphalt and many other materials can be utilized. The major advantages are the ease of application, the stability of coating solutions, easy control of coating thickness, and the uniformity and continuity of the applied film. The disadvantages involve the general flammability, toxicity and cost of solvents other than water, high viscosities of coating solutions of low solids contents, and the difficulties of producing bubble-free films in the thicker gauges.

The second coating technique involves the use of water-borne emulsions or dispersions of synthetic resins, waxes or other film-forming compounds. (See Fig. 2.) These materials can be applied to the paper using the same type of equipment used for solvent coating, but with the proper adjustment of the properties of the dispersion for adaptation to any specific application. This method possesses the advantages of a cheap, nonflammable, non-toxic, non-recoverable solvent, and the use of high solids content due to the non-dependence of dispersion viscosity on the molecular weight of the film-forming constituents. The disadvantages, however, include the general sensitivity of emulsions to freezing,

agitation, pH, the action of certain metals and metallic pigments, and the swelling and distortion of the paper resulting from the water solvent. The water permeating into the sheet generally immobilizes the applied coating, and the water is easily removed since there is generally no formation of a continuous resin film to cause solvent entrapment until the water has practically all been removed. In most cases a short treatment of the applied film at temperatures in the range of 350 to 400 deg. F. is required, because true films are laid down by only a few specific resins, and in most cases the coating must be fused after the water has been evaporated off. Even the use of sufficient heat to produce fusing, however, is not generally sufficient to obtain a completely continuous film, and in many cases a water-sensitive emulsifying agent remains in the film. The properties obtained with these films are directly proportional to the extent of continuous film formation. The gas and water-vapor transmission of sheets produced using this technique are, however, generally higher than those produced by lacquer or solvent methods using the same base resin. Properties such as grease resistance, water resistance, scuffproofness and heat-sealability can be obtained, however, which are the equal of the lacquer films.

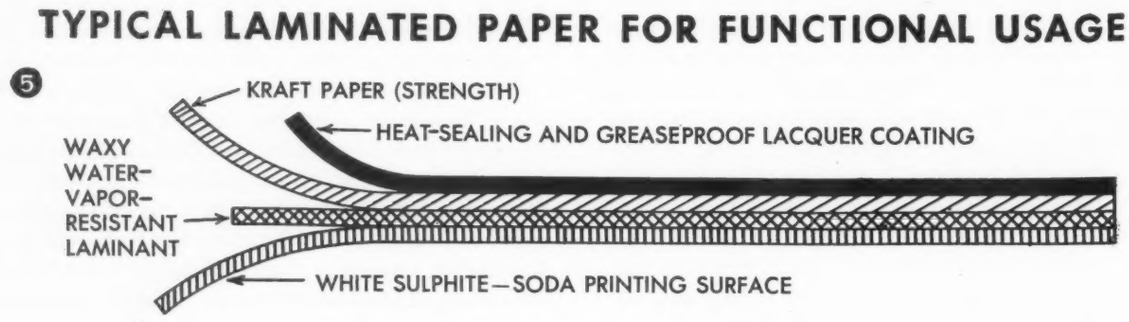
A third procedure for the preparation of functional films involves the use of hot melts. (See Fig. 3.) There are two temperature ranges for hot melt application, one in the range of wet waxing (between 140 and 250 deg. F.) and the second in the high temperature range (above 300 deg. F.). Hot melts can be produced which are based on synthetic resins, waxes, natural resins, asphalt, and cellulose-based plastics. In most cases, however, in order to obtain the proper viscosity in the melt at reasonably low application temperatures (300 to 350 deg. F.), low-viscosity type film formers must be used, with the result that the coatings lack somewhat in strength and flexibility. Excellent continuous films possessing such properties as high gas and water-vapor resistance, heat-sealability, scuffproofness, water and oil resistance and transparency can be obtained. The coatings are generally difficult to apply in thin films; they tend to decompose and darken in the coating machine under continued heating, and it is almost impossible to obtain all the desired properties in one material—i.e., flexibility and hardness. The advantages, however, include the elimination of all solvents and the possibility of putting up hot-melt coating equipment in a very limited floor area.

A recent advancement in the coating field involves the use of high solids lacquers (40 to 80% solids) which contain high boiling solvents and can be applied hot so as to reduce the viscosity. The compounds produce the advantages of lacquer-coated sheets using a modified hot-melt technique.

One of the most recent developments in the coating field is the use of organosols or plastisols.[1] These compounds contain the minimum amount of a solvent in which the resin is not soluble and sufficient plasticizer to soften the surfaces of the resin particles and produce flow and film formation. They are, therefore, a sort of highly concentrated dispersion and may have solids contents in the range of 70 to 80%. Their major advantage is that they produce relatively low-viscosity coating mixes at room temperature and use solvents with high boiling points and low flammability. They can be laid down to the sheet using any technique suitable for heavy coating mixes, the solvent being removed at moderate temperatures and the particles fused into a film using a short, high-temperature bake. (See Fig. 4.) Since a non-polar solvent is generally used, there is no swelling or distortion of the base sheet. In general, such films have been necessarily applied in heavy coatings in order to attain functional properties and the adhesion to the sheet is generally not very good. It is felt that with further development, however, this type of compound may fill the gap (*Continued on page 162*)

[1] See "Organosols," MODERN PACKAGING, March 1946, p. 193.

5—*In a laminated structure each of the layers can contribute some desired function. In this case the final sheet is greaseproof, heat-sealing, waterproof and water-vaporproof. It can be printed on one surface.*



Shock cushioning . . . how much and where?

*by A. M. Underhill**

The war has introduced the term "packaging"—long familiar to the cosmetic and other similar industries which must add eye appeal to their products—to the *packing* engineer.

In its simplest form we think of a package as a wrapping or covering for any article. From this we advance to the complex assembly of materials which surrounds a product; this also is a package.

Our package then, may or may not be the final stage for the shipping of the product. If the package is complete, then we may speak of the supporting material inside the shipping container as packaging and the complete unit as both packaged and packed. If it is not the final stage and something else is to be added before shipment, then we have a true package.

The principal functions of the materials used in packing, apart from the requirements of sales and distribution, are: first, to absorb and distribute shocks; second, to transform and distribute shocks; third, to localize the stresses caused by shocks.

1. To absorb and distribute shock we may increase the area over which the shock operates in numerous ways. One of the most common of these is to prepackage in an inner container with the article rigidly held in place by supports of one kind or another. This package, which is then larger than the article itself, is floated in a cushioning medium. Another type is the present-day flat in egg cases wherein each individual egg is set on end in a part spherical cup. This increases the area from a point of contact to a surface as large as a considerable percentage of the total surface of the egg being packed.

2. To transform and distribute shock, the article is fastened at only a few points to one face of the container, with no other direct contact. An example of this principal is a transformer or washing machine bolted to a rigid base in a wire-bound or corrugated box. Because there is clearance around all sides but one, the shipping container can undergo distortion diagonally and in itself absorb shocks before enough stress is produced to damage the contents.

3. To localize the stresses caused by shock, the container and packing are designed to localize the stresses at the parts of the article best able to stand them. A rectifier or radio tube suspended by a webbing inside a light-weight flexible crate or box is a good example. Here the shock is absorbed by a slight distortion and flexing of the container or crate and the movement of the suspension. Another example is a multiple package of watt-hour meters, each meter being suspended in a die-cut sheet or inverted cover, so that each of the meters is held at a point that can withstand considerable shock and does not come in direct contact with the other meters or packing material at more fragile points.

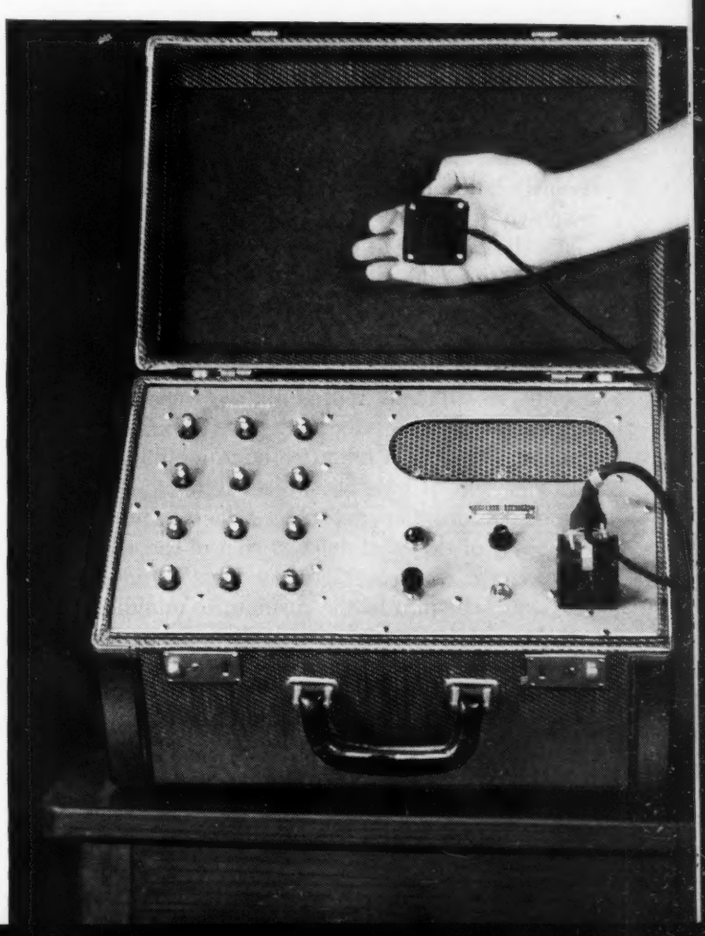
The principles involved in 2 and 3 above are perhaps better understood and used than those in 1, which involves the use of a cushioning medium. Of all the factors involved in the preparation of articles for shipment, less study has been given to this factor than perhaps any other. It is true that some advance has been made in this field, but no real scientific approach to the principles has been attempted. What little progress has been made has been the result of the trial-and-error method, with no attempt made to publicize the results or compute basic data.

By cushioning, we mean the materials and/or methods used to protect an article against breakage or damage in transit, in handling and in storage. As the primary purpose of this article is to discuss the absorption and distribution of shock or stress, most of what follows applies particularly to delicate and fragile articles such as glass products and delicate mechanisms.

How much protection?

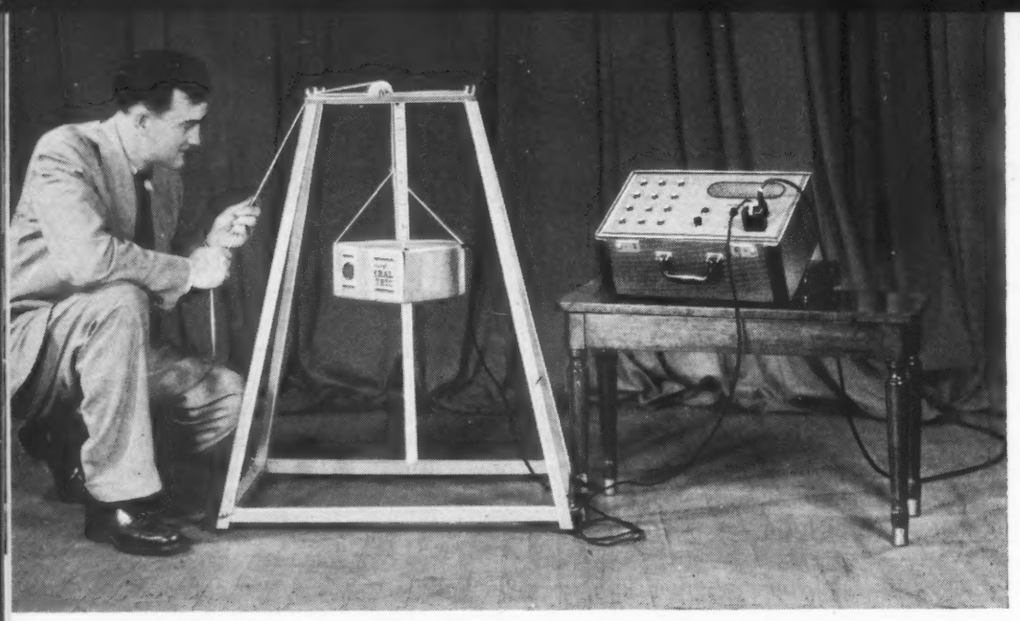
Any article can be protected against damage in shipment if an exceptionally strong container is used, plus

1—*Close-up of the Cushioning Meter, showing detector head (in hand) which goes inside package to be tested.*



* Superintendent of Shipping, West Lynn, Mass., Works, General Electric Co.

(*Page 141*)



2—*Cushioning Meter in operation in drop test. Detector head is attached to the product inside package. Small bulbs on meter at right will light up at impact, registering the number of "g's" of force exerted by product and thereby determining accurately the amount of cushioning material needed.*

an excessive amount of the proper inner cushioning material. This is obviously a waste of money, not to mention materials.

Our problem is to investigate and thoroughly understand both the article to be packed and the materials available to protect it, ignoring the container itself, about which much has been written and which is fairly well understood. There are many types of cushioning materials, among which are corrugated pads of many kinds, wood excelsior of various grades, cellulose wadding, cotton batting, shredded papers and cellophane, varied pads of most of these materials, molded pulp forms and a new one, rubberized hair or fibre.

It is an interesting fact that some articles are best protected against damage by a rigid package, while others must be so loosely packed that they are almost floating free. Between these two extremes are such a variety of conditions that every product requires an engineering analysis of its design, its inherent strength, its functions, finishes, and—most important—its distribution, before the packing engineer can even start his development work.

To this end, a new value of the degree of shock has recently been introduced to the packing engineer which is known as so many "g's." This "g-factor" is the safe shock that a unit can withstand without damage or the impairment of its usefulness. It can be defined as the ratio of the maximum dynamic shock load which it can stand without damage to the static load due to its weight. The algebraic expression for this definition is F/W, in which W represents the weight of the unit in pounds, F the maximum safe dynamic force in pounds. Thus, if a unit weighing one pound has a g-factor of 100, it can be subjected to a shock of 100 pounds without damage. This g-factor must represent the ability of the most delicate part of the unit to withstand shock, and consideration must be given to the position of the unit in the cushion, to minimize shock.

Expressed in another way, the g-factor is the resistance of a unit to mechanical abuse in terms of how great a deceleration of motion it will withstand. For instance if the package is dropped one foot onto a solid surface and the cushioning allows the device to move one inch before it comes to rest, with the resistance to the movement increasing directly proportional to the movement, the average deceleration the device experiences may be expressed as:

$$\text{Average deceleration} = \frac{\text{Height of fall} \times g}{\text{Movement of device}}$$

or, for the above example:

$$\text{Average deceleration} = \frac{1' \times g}{1/12'} = 12\ g$$

where g is the acceleration gravity or (32.2 ft. per sec. per sec.) However, the peak deceleration does the damage, and this is twice the average value of deceleration under the assumption that the resistance to the movement is proportional to the movement. Therefore, the device must be able to withstand 2×12 g, or 24 g if the movement of 1 in. is adequate.

In other words, to protect a device properly it is becoming more apparent that we must first know how many "g's" a device will stand in itself before we can determine the kind and amount of packing protection we must give it so it will withstand the shocks of shipment. Cushioning, therefore, must be considered in relation to the distance within the package the device may or can move before coming to rest so that the shock transmitted will not exceed the allowable "g's."

In the past it has been a common practice, in testing, for the packaged device to be dropped from increasing heights of fall onto a hard surface, and to open the package after each fall to observe the results until damage occurs. Of course, if an accepted standard height is recognized, as may be true in the future, then it would not be necessary to open the box so often for examination. Many such tests have been valueless because the package has been put through a cycle of tests without examination and in a sealed system it is not possible to know where or when damage occurred.

Instruments for measuring shock

By the use of a properly designed, shock-measuring unit it is possible to measure transmitted shock with-

out opening the container after each drop. If the amount of shock that will damage the article is known, such an instrument will indicate whether a damaging shock has been transmitted to the article. Also, when such a unit is used it is not necessary to use the actual article in making the tests, as the transmitting unit can be attached to a dummy of the same size and weight.

Such a unit has been recently developed and is being made and sold by General Electric. It is known as a Cushioning Meter and is illustrated in Figs. 1 and 2. To understand its use and value, we must know what we wish to measure and why the results are positive.

There are numerous methods of measuring deceleration, penetration, or stresses in a cushion, such as a free falling body onto the cushion, or by measuring the compression of the cushion material with a static hydraulic testing machine and/or a dynamic loading machine. These other methods have a place in evaluating cushioning, but they are insufficient alone, because they lose the effect or retardation offered by the side walls made up of cushion material in a package.

In order to explain why this is so, let us visualize a complete package. This normally consists of outer container, cushioning medium, unit under test, and, with an enclosed mechanism, mechanism within the case.

During the fall of such a package, the box and all its contents operate as a unit and fall as one. This condition remains true up to the point of impact, when each part becomes independent and operates as follows:

First, the box stops with a jolt. The cushioning then begins to move downward. This movement may be very slight but can be measured. Next, the article begins to decelerate into the cushion until it has used up its momentum, unless the cushion is not deep enough to absorb it, in which case it hits bottom too soon. If the depth of the cushion is sufficient, when the unit has exhausted its downward momentum the balance of the shock is taken by the mechanism and must not exceed the allowable shock.

One of our principal factors to consider then is the depth of cushion necessary. It would seem at first thought that by selecting two or more cushioning mediums we could vary the depth of the cushion, but actually the kind of cushion material has very little real bearing on the depth needed, because the unit must travel a predetermined distance into the cushion regardless of the cushion medium to properly protect it.

The resistance of a given device to mechanical abuse may be expressed in terms of how great a deceleration it will withstand. The abuse that is normally encountered results from a drop or the impact against another object.

It is assumed that the strength of the outside container is adequate to withstand normal rough handling, and that damage to the device is the primary problem. The drop test is valid for this purpose, as the only thing that will damage the device is a shock, and handling may be resolved into an equivalent drop. If the package is dropped one foot and the cushioning medium allows the device to move one inch before it comes to rest, with the resistance to the movement increasing directly proportional to the movement, the maximum deceleration the device experiences is expressed as height of fall times 2 g. divided by movement of device.

Using this basic foundation from the laws of motion, the chart shown as Fig. 3 indicates the relationship between maximum deceleration and the movement of the device for three heights of fall.

For example, if we have a device which will stand 65 g's and must withstand a 48-in. drop, then the device must be allowed to move $1^1/_2$ in. in the cushion. But, as we cannot move $1^1/_2$ in., if there is only a total of $1^1/_2$ cushion medium, the figure given on the chart for h_2 should be double to give the depth needed. This allows a safety factor sufficient for most cases. Therefore, for the case cited we need a total of 3 in. of cushion.

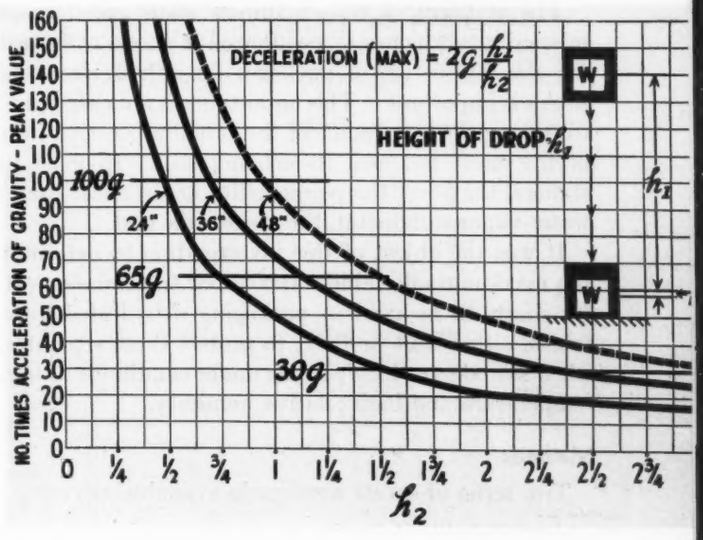
Having then from Fig. 3 determined the depth of cushion required, it is necessary to select the *proper kind of cushion* which will support the load and at the same time deflect properly for the load to which it will be subjected. In this selection we must consider the qualities necessary in the cushion material:

1. It must be of the proper density to support the unit without undue compression.
2. It must give in readily and uniformly under the stresses it may get.
3. It must withstand rough handling and repeated shocks without deteriorating.
4. It must stand up under moisture conditions.
5. It must retain its form under repeated shocks.
6. It must not "dust" too easily.

If all these qualities cannot be secured, then those factors which are most advantageous must govern our choice, with Conditions 1 and 2 essential in all cases.

With a cushioning meter like the one illustrated, tests can be made of the numerous kinds of cushion available and charts prepared which will allow a reasonably easy selection for the products under consideration.

3—*The graph below is based on the laws of motion and shows the relationship between maximum deceleration and the movement of the product for three heights of fall.*



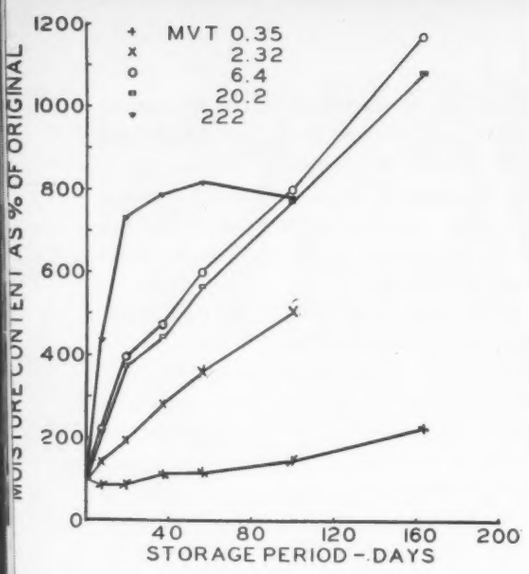


FIG. 1

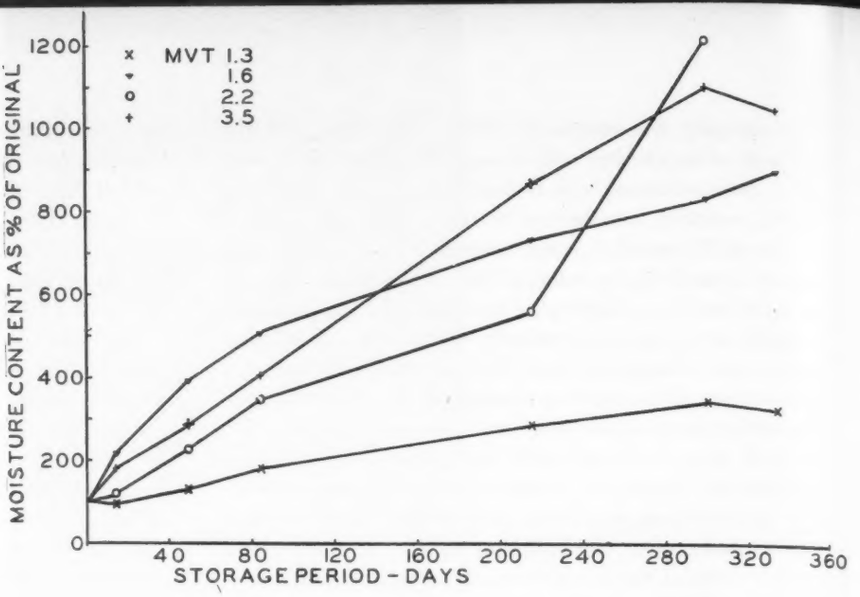


FIG. 2

Showing moisture changes in dehydrated beets when stored at 90 deg. F., 90% relative humidity for 160 days and moisture changes in the beets when stored at 90 deg. F., 90% relative humidity for 340 days.

Food packaging studies

3. Significance of WVTR of non-metal packages for dehydrated foods*

by R. F. Brooks and G. J. Hucker

Although the complete fabricated package is of first importance insofar as commercial packaging is concerned, no package can show greater protective action than is evidenced by the protective value of the original sheet. In the storage of dehydrated vegetables, whether in unit or bulk packages, the protection from moisture increase is of primary significance. Moisture increase is determined by the relation between the water-vapor transmission rate (WVTR) of the sheet in the package and humidity—and to a certain degree temperature—of atmosphere in which package is stored.

The problem of the maximum water-vapor transmission rate which may be allowed in sheets to be used for the fabrication of packages for dehydrated vegetables is important. This importance is not only significant from the standpoint of the actual protective value of the sheet but also its original cost. In most instances, the lower the permeability of the sheet from a water-vapor standpoint, the greater the cost.

It was the object of this investigation to determine the maximum allowable water-vapor transmission rate for sheets to be used in packaging dehydrated vegetables, either unit or bulk, to protect these vegetables when stored over long periods under conditions of high temperature and high relative humidity.

Methods

Two series of sheets were made available, covering a gradation in water-vapor transmission rate (TAPPI)[1] from 0.35 to 222.0. The first of these series represented sheets of a wide range of water-vapor transmission rates, while the second series was confined to the critical range between 1.3 and 3.5.

Envelope packages, 8 in. by 10 in., were made from each of these sheets and filled with dehydrated diced beets and stored in conditioning rooms at various temperatures and humidity levels.

Similar samples of dehydrated diced beets were stored unprotected in open flat trays to determine the moisture content of the beets when an equilibrium was reached at the various levels of relative humidity.

The test packages were stored in conditioning rooms varying from 55 deg. F. to 120 deg. F. with humidities ranging from 20% to 90%. A series of packages was also stored in a "tropical" conditioning room in which the temperature and humidity varied in 12-hour cycles from 90 deg. F., 75% R.H., to 111 deg. F., 72% R.H.

Data

Equilibrium moisture content. Two series of beets were stored unprotected in the various conditioning rooms with a gradation in the relative humidity. At the end of seven days a sample was removed from each conditioning room. In order to determine if the unprotected beets had reached an equilibrium with the

* Journal Paper No. 657, New York State Experiment Station, Geneva, N. Y.

[1] Water-vapor transmission procedure as suggested by the Technical Association of the Pulp and Paper Industry. Values are grams water vapor transmitted per square meter per 24 hours at 73 deg. F. 50% R.H.

TABLE I—EQUILIBRIUM MOISTURE CONTENT OF DEHYDRATED BEET STORED UNPROTECTED AT VARIOUS HUMIDITY LEVELS

Storage conditions		*Moisture content as % of original*			
° F.	*% R.H.*	*7 days' storage*		*14 days' storage*	
120	20	50		51	
90	20	79		73	
			Average 65		Average 62
100	50	218		218	
70	50	222		223	
			Average 220		Average 221
85	65	482		441	
90–111	75–72	648		674	
90	90	1,110*		...	

Control moisture content of dehydrated beets—3.01%.
* Sampled after 6 days' storage; development of mold prevented further storage.

surrounding moisture content of the atmosphere after seven days, a duplicate series allowed to remain for 14 days was removed for comparison with the moisture content of the seven-day series.

It was found that the increase in moisture content of the beets at the end of seven days was approximately identical with the moisture content of a similar series allowed to remain in the same humidity for 14 days.

The question as to the relation of temperature to the adjustment of the equilibrium of moisture content of beets to the surrounding atmosphere is of packaging interest. It should be tentatively concluded that temperature is of little direct significance in the beets arriving at a moisture equilibrium with the surrounding atmosphere. It should be noted (Table I) that beets stored at 100 deg. F. and 50% R.H. did not arrive at a final moisture content greater than similar beets stored at 70 deg. F. with 50% R.H. It should also be noted (Table I) that in the case of extremely high temperatures, 120 deg. F., with only 20% R.H., the moisture content of the beets was approximately 40% below that of the original beets when an equilibrium had been reached.

The equilibrium moisture content of the beets stored unprotected at various degrees of humidity varied from approximately 40% decrease at 20% R.H. to 1,000% increase when an equilibrium was reached in conditioning rooms with an R.H. of 90%.

Increases at various temperature and humidity levels

Protection at 120 deg. F., 20% R.H. In the first series of packages prepared from protective wraps varying from 0.35 to 222.00, it was noted that at this low relative humidity none of the packaged beets increased in moisture content. In fact, four of these protective wraps showed identical moisture loss over a period of 160 days, while one, although showing a loss, was not as pronounced as the remaining four.

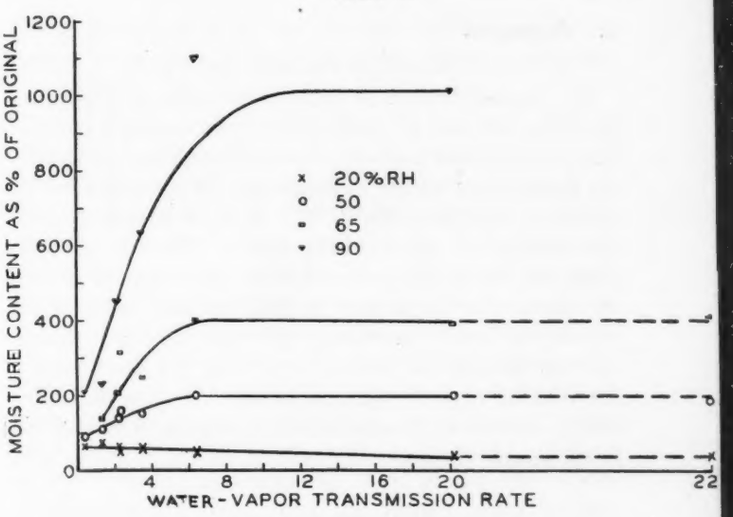
At this high temperature and low humidity there is little need for water-vapor protection. Prolonged storage indicated that this low humidity tended not only to protect from an increase in moisture content but also to have a certain desiccating effect.

Protection at 120 deg. F., 50% R.H. When dehydrated vegetables were stored in the series of protective wraps varying from 0.35 to 222.0 for 100 days at 120 deg. F., 50% R.H., the results were somewhat similar to those found in the storage at 120 deg. F., 20% R.H. However, in the case of the protective sheets showing the highest moisture transmission rates, it was found that with this increase of relative humidity the moisture content of the beets increased perceptibly. With the exception of the protective wrap with a water-vapor transmission rate of 0.35, all of the remaining packages with high water-vapor transmission rates showed considerable increases and lack of protection insofar as moisture content was concerned.

Protection at 90 deg. F., (*Continued on page 178*)

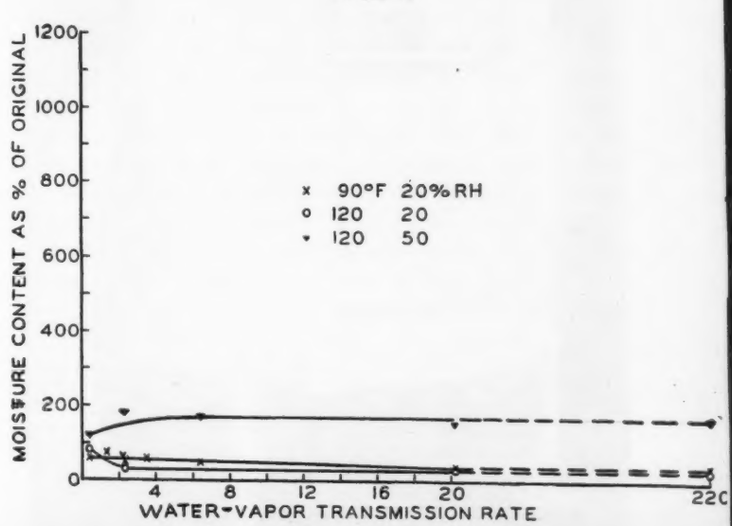
3—Showing the moisture changes after 160 days in dehydrated beets when stored at various relative humidities (70 to 90 deg. F.) and protected by a series of wraps with increasing rates of water-vapor transmission.

FIG. 3



4—Showing the moisture changes after 160 days in dehydrated beets when stored at various temperatures of from 90 to 120 deg. F. and protected by a series of wraps with increasing rates of water-vapor transmission.

FIG. 4



Standard Test Methods

2. For water-vapor permeability at 100 deg. F.

1. Definition

The rate of water-vapor transmission of materials may be defined as the weight of water-vapor transmitted per unit of area in unit time under constant conditions of water-vapor pressure differential.

2. Intent and scope

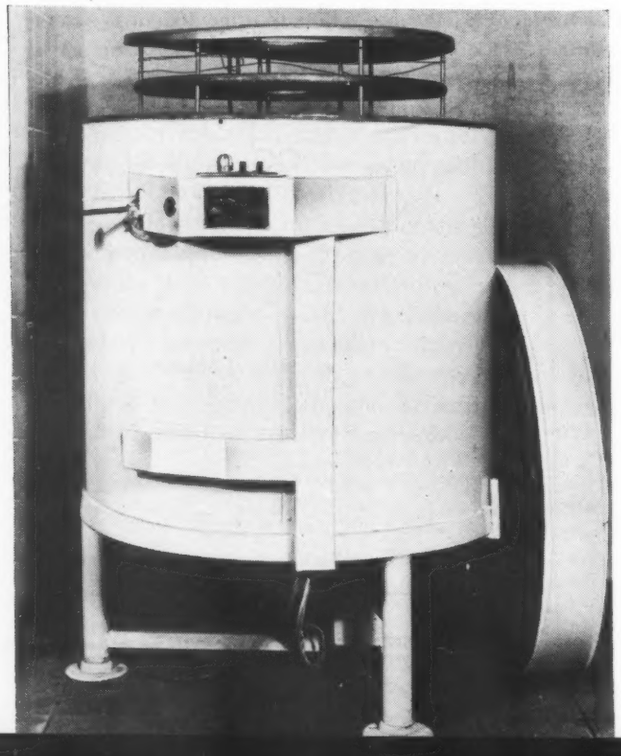
In packaging it is necessary to determine the rate of water-vapor transmission in order to establish specific values for materials for the packaging of products which must be protected against moisture absorption and loss. The method lends itself to the evaluation of materials which may be used for packaging at normal and elevated temperatures.

3. Apparatus

G.F.W.V.T. Humidity Cabinet (See Fig. 1)

A. Description—The cabinet operates on the principle of a wet and dry bulb control of a confined volume wherein constant humidity and temperature conditions are maintained within close limits. Water required to maintain humidity about 90% R.H. is supplied from the bottom of the working space. Electric heating elements thermostatically control conditions within the chamber. Air circulation is positive and constant in velocity in a path downward through the center space and up around the annual space on the outer edge. Air velocity over the samples is kept very low and constant. A removable cage with four annular wire shelves holds sample dishes.

The humidity cabinet specified for this particular test.



4. Reagents and accessories

A. Test plates—An aluminum dish allowing a sample area of 20.63 sq. in., and of such design to allow a strong sealing of specimen by wax with no danger of vapor leakage or edge migration. After each usage the dishes are washed first with soap and water to remove all traces of calcium chloride and then with toluene or Benzo-Sol (a light petroleum fraction) to remove any particles of wax. The dishes are numbered clearly A-1, A-2. . .A-6; B-1, B-2. . .B-6, etc. A-1 and A-2 contain duplicate samples from different parts of same material. This applies to all pairs, A-3 and A-4, etc.

B. G.F.W.V.T. desiccator (Scientific Glass Apparatus Co., Bloomfield, N. J.) (See Fig. 2.)—The bottom of a standard 6-in. desiccator and a bell jar which is 17-in. high over all is used as a top part. A frame of metal shelving fits into the desiccator so as to hold twelve aluminum dishes. Anhydrous calcium chloride, 8 mesh, is used at the top and bottom. Water vapor, being lighter than air, rises to the top and, therefore, a desiccant should be used at the top as well as at the bottom. Renew the calcium chloride every two weeks.

C. Anhydrous calcium chloride (approximately 8 mesh)—50 cc. by volume per test dish.

D. Wax—The wax must not check, crack, or release from the metal cup in repeatedly going through the temperature cycle from room temperature to 100 deg. F. and reverse. It is important that the wax mixture contain no volatile portion which would cause a weight loss during the test and the mixture should not contain any materials which oxidize or otherwise increase in weight. The following wax mixture has been suggested as being an ideal composition for this sealing wax:

Amorphous wax No. 2305	60% by wt.	Socony Vacuum Oil Co.
Esso paraffin wax	40% by wt.	Esso Co., Inc.
	100% solids	

E. A metal template with a $5^1/_4$ in. diameter on the upper surface tapering to a $5^1/_8$ in. diameter on the lower surface through a depth of $^5/_{16}$ in. Three or four metal ears project from the surface serving to center the lower surface of the template concentrically with the inside peripheral edge of the plate. They also provide a support for leverage that is applied to lift the template after the wax hardens.

F. A suitable die or cutting tool, $5^5/_8$ in. in diameter, used to cut the samples to a uniform size, without the said die disturbing the surface characteristics of the material.

(*Page 146*)

G. Analytical balance—accuracy not less than ±0.0005 gram.

H. Miscellaneous—

1. Solder iron, flat iron, other electrically heated device.
2. Petrolatum.
3. 40-mesh copper screen for straining wax impurities.
4. Screw driver.
5. Metal pot with a 360 deg. F. thermometer.
6. Sharp knife.

5. Test sample

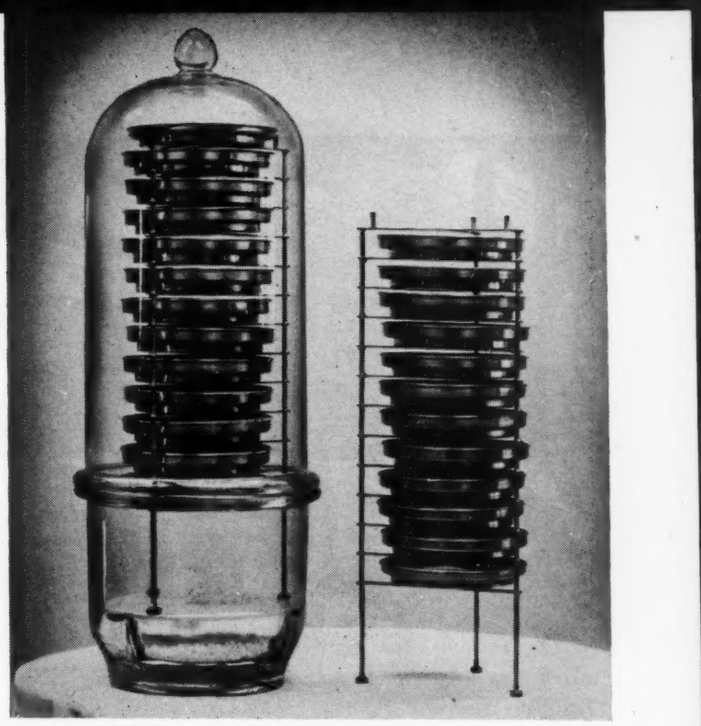
A. Sampling—Test specimens shall be representative of the material being tested. The paper is inspected for flaws, pinholes, etc., that are not normal to the material and then a representative section of about 6 in. square is selected. The sample is then die cut to $5^5/_8$ in. in diameter. Since the test is run in duplicate, two samples are taken from each material to be tested.

B. Preparation—samples must be free of residual solvent, excessive internal stresses or any other potential weight or dimensional changes which would interfere with the accuracy of the weighing and the testing cycle. If freshly prepared materials are used they can usually be stabilized by storing for 24 or 48 hrs. at 100 deg. F. at elevated humidities.

6. Test procedure

A. Standard conditions—The preparation of the test dishes is performed in a continuous cycle with speed and precision. Fifty cc. (by volume) of anhydrous calcium chloride poured into each test dish and spread evenly over the bottom; the sample is placed in position, the template is centered and allowed to come gently into contact with the specimen. Before the template is used, it is given a *slight* film of petrolatum along the outer surface which contacts the wax. The wax mixture is poured at 200 deg. F. into the annular space between the template and rim of the aluminum dish, filling up this space to within $^1/_{16}$ in. of the top of the dish. It is desirable to have the whole assembly at this stage on a small turn-table arrangement so that the liquid wax can be poured along the entire circumference of the trough.

The assembly is allowed to stand until the unit has cooled to room temperature and the wax has set. The template is removed by prying carefully with the screw driver, giving a slight twist that presses the wax against the aluminum dish. The template is released and is easily lifted off the plate without any injury to the membrane or to the seal. After the template has been removed, the dishes are carefully examined for flaws. They are then placed in their proper position in the cabinet and when the assembly is in proper order it is then placed in the humidity cabinet, which has been brought up to standard conditions of temperature and humidity. After the conditioning period, the samples are removed and placed in the desiccators, for a period of 4 hrs. The time required to bring the samples to a constant rate of water-vapor transmission before the initial weighing takes place will vary with the composition and construction of the sample. Homogenous single plies of moistureproof material, such as any of the plastic films, should be conditioned for 24 hrs. for thicknesses up to and including 2 mils. Over 2 mils of thickness, the conditioning period should be 48 hrs. For laminated, coated and other compound structures, a surface coating of 1 mil of thickness or greater shall be considered as a ply but no laminant will be considered as a ply. On this basis, material of 2 plies may be conditioned 24 hrs. and three or more plies for 48 hrs. Extraordinarily complex or unusual materials can be given an estimated conditioning period and then weighings made each 24 hrs. until constant weight change is obtained. The plates are so arranged on the racks that the proper order is kept throughout the entire test, facilitating the records that are to be established from each. After the elapsed time, the samples are then removed and weighed on an analytical balance to the third decimal place. The samples are then returned in their proper order to the humidity cabinet for an exposure of 68 hrs. under controlled and recorded conditions of temperature and time. After that elapsed time, the samples are removed from the cabinet, placed in the desiccator and conditioned for 4 hrs., and then they are re-weighed to the third decimal place.

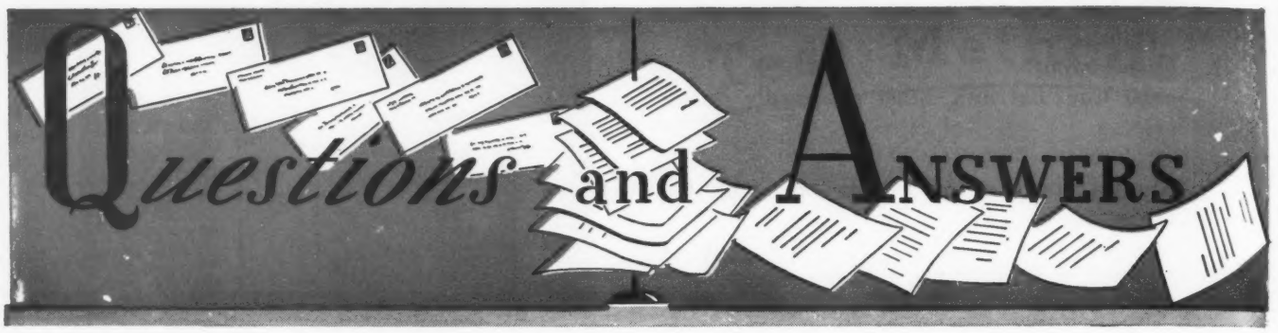


Frame holding 12 dishes fits inside of the desiccator.

The samples are then removed from the plate by heating them for a short space of time on a hot plate in order to melt the wax and provide the release of the material from the plate. The calcium chloride is discarded and the plate is washed with water and solvents to remove all traces of the above-mentioned material.

7. Calculations

Water-vapor transmission (*Continued on page 164*)



This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 122 East 42nd St., New York 17, N. Y. Your name or other identification will not appear with any published answer.

Specific WVP Rates

QUESTION: I was very much interested in the article which appeared in August 1945 on "Simplified WVP Test for Paper and Films." The first part of this article lists several materials and their water-vapor permeability. However, do you have any values for the following materials: 25-lb. glassine waxed two sides to 28 lbs., 38-lb. laminated glassine and 38-lb. laminated glassine waxed two sides to 41 lbs.

ANSWER: The last two materials on which you have requested the water-vapor permeability rates are not adequately described or specified. There are many factors which influence the water-vapor permeability of materials and unless most of them are known it is impossible to even approximate the transmission rating.

The first material you mentioned—25-lb. glassine waxed two sides to 28 lbs.—will probably have a water-vapor permeability rate of 0.1 to 0.2 gram per 100 sq. in. per 24 hrs., 100 deg. F., 90% R. H., using calcium chloride in the test cup, the exact value depending upon the glassine, wax, and continuity of coating.

The next material—38-lb. laminated glassine—needs to be more completely described as to whether the laminant is a waxy laminant, asphaltic, water paste, etc., and also the weight of laminant per ream of glassine must be known to estimate the transmission rating.

The same questions apply to your third material, which is 38-lb. laminated glassine waxed two sides to 41 lbs. In this last sheet if the laminant is a waxy type, water-vapor permeabilitywould be extremely low.

Tablet dispenser

QUESTION—We are sending you one of our cartons of a new tablet dentrifice. We are having flavor loss through these cardboard containers. We are interested in a dispensing-type package for these tablets which would also prevent loss of flavor and yet we do not want to use a bottle.

ANSWER—Most of the companies producing metal cans made small specialty packages which will dispense single tablets. It is questionable, however, whether production has been resumed on these small and intricate prewar items. There is no question that such a metal can with dispenser top will serve your purpose very well and protect the aromatic portions of your flavoring material. As a temporary expedient, however, you can achieve a great deal of flavor protection by overwrapping your present small carton in moistureproof or non-moistureproof cellophane. A lacquered or transparent-type of glassine would also do quite well.

Some of the companies producing equipment for making small heat-sealed flexible packages have experimented with single tablet dispensing closures and constructions. I suggest that you inquire of such producers and see whether or not you could obtain a small package with such dispensing features.

Hot-grease products in paper

QUESTION: We have been asked by a foreign company to give them a survey of the practice and development of packaging of hot-grease products in paper. These products include hot fat, liquid soap and lubricating oil. Could you give us successful development which has been done along these lines and cost as compared to metal?

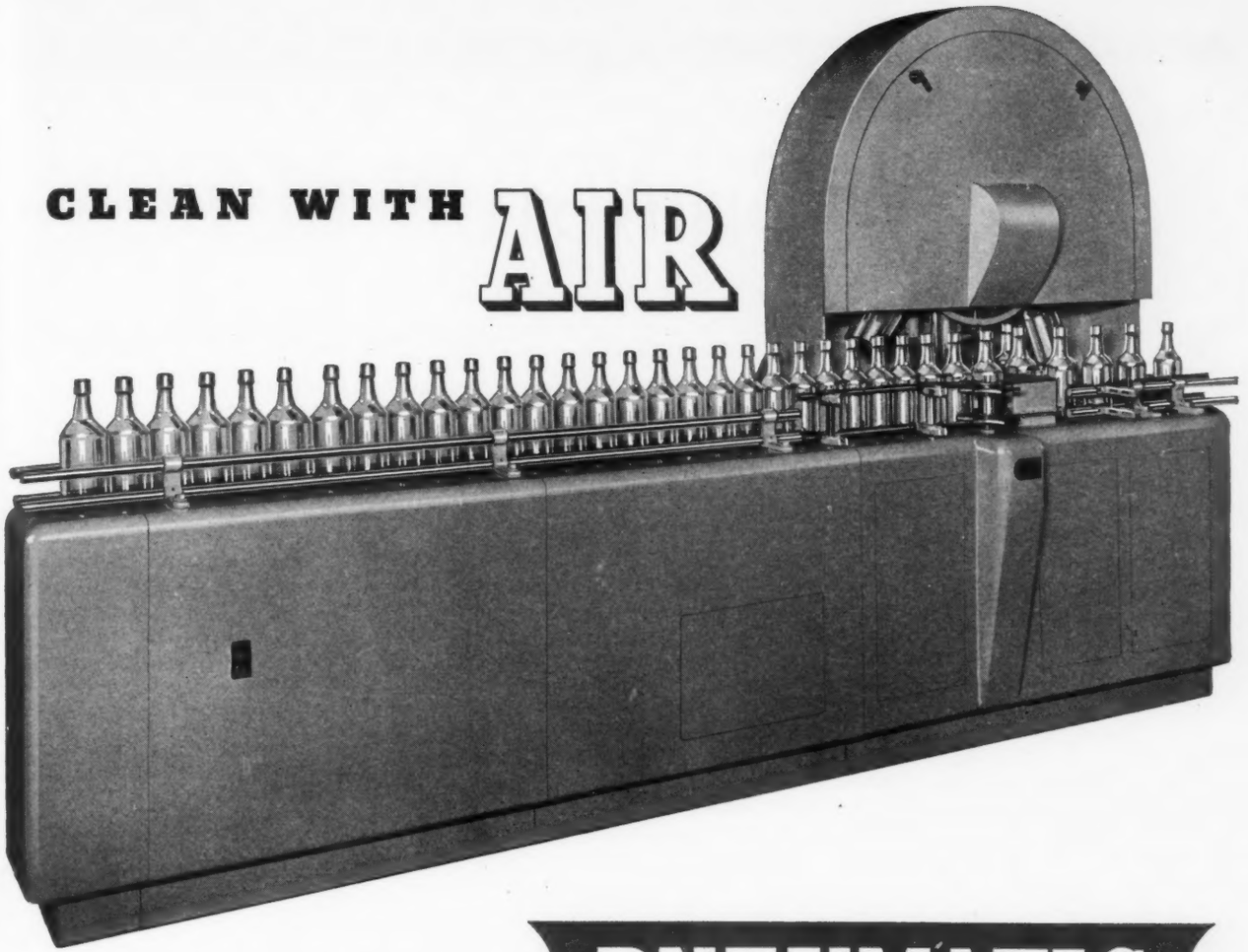
ANSWER: To our knowledge there has never been a completely satisfactory package to contain hot oils and fats, liquid soap and lubricating oils other than glass or metal. During the war, many of the large producers of shortening, as well as the oil and soap companies, attempted to find substitute containers. Some success was achieved with shortening, since it was always handled in a solid or semi-solid form but the package was not fully automatic in production, was difficult to re-close and cost as much as glass or metal.

We do not know of any successful attempt to package liquid soap. Lubricating oil packages made of paper turned out to be as expensive as metal and were all dropped when metal became available.

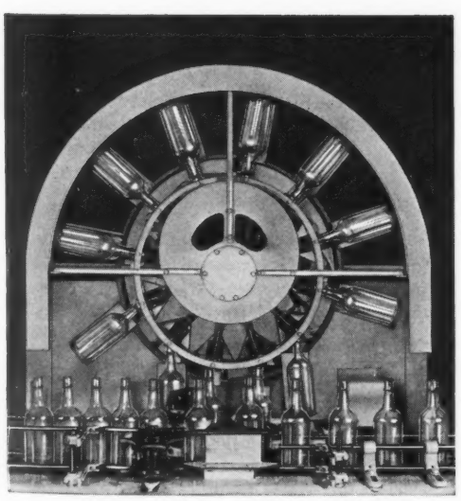
It is true, however, that sample packages can be made of various oil- or soap-tight materials and these packages will hold the product, but it is another matter to produce perfect packages at high speeds necessary to make such a container commercially.

We regret that we cannot give you more specific information than the foregoing but this information should be sufficient to satisfy your client as to the difficulties of flexible packages for these products.

CLEAN WITH AIR



. . . CLEAN WITH PNEUMATIC



One of the first requisites of a smooth running bottling line is the proper handling of containers. Gentle, yet fast, positive action is needed and this means strict adherence to specified tolerances on all machined parts plus a thorough understanding of the job at hand.

It is not by any accident that Pneumatic equipment is so well known for its "Lower Cost per Container" operation. Over fifty years experience in the application of sound packaging principles has provided an accumulation of technical "know-how" that is second to none in the field today.

One of Pneumatic's latest developments is the streamlined Rota-Cleaner shown above. Operating with a continual, smooth flowing action this machine cleans most any shape bottle up to the 1 qt. size by rotating it to an inverted position where it is subjected to a blast of dry air, after which the thoroughly cleaned bottles are delivered evenly spaced onto a discharge conveyor. Unit is completely equipped with safety devices.

If your problem is in Filling, Capping, Labeling or Cleaning, your best assurance of Better Bottling probably lies in a Pneumatic machine. Write us today. Pneumatic Scale Corporation, Ltd., 82 Newport Avenue, North Quincy 71, Massachusetts.

PNEUMATIC

PACKAGING AND BOTTLING MACHINERY

Over eighty different machines for the packaging of dry, free-flowing products and the cleaning, filling, capping and labeling of containers for liquids and semi-liquids

WASHINGTON REVIEW

● **OPA Status Quo for Packaging**—most packaging materials are again under OPA regulation, and the majority of them will remain there at least for the foreseeable future. Predictions are, however, that adhesives, animal glues, cellophane, polystyrene and vinyl will be "out from under" within a few weeks.

Aluminum for packaging purposes appears to be free of OPA restrictions, though for other purposes it is still controlled. Except for spirituous liquors, glass containers are still subject to price regulation. Some machinery is free from price control, but at least 80% of the machinery output is still under ceilings. Paper is very tightly controlled, the only exception being water-vapor barrier types containing 12½% or more asphalt. Container board, boxboard, tin, tin plate, rubber—both natural and synthetic—all will continue to be under price control for some time.

● **Tin Hopes Unfulfilled**—Malay production of tin during the first quarter of this year amounted to but 802 tons, metal content, with indications that the second quarter figure would not be far above that total. The figure was made public after Great Britain notified the U. S. operating committee of the Combined Tin Committee that operations were not proceeding as anticipated. Last February a British mission which started investigating the tin situation after Malaya was recaptured by the Allies estimated 1946 production at 12,500 tons, but on the basis of the first quarter's production, 1946 output will be only about a fourth of this estimate. Average prewar production 75,000 tons.

From the Dutch East Indies, another important tin source, the Government has been advised that political difficulties are among the reasons why the tin production in this sector is lagging.

It is conservatively estimated here that it will be another two years before supply of tin comes anywhere near the demand.

● **Burlap Situation Easing**—With the flow of burlap from India, which is the principal world source, increasing, Civilian Production Administration has allocated a larger percentage to bag makers to liquidate the Government's stockpile.

The agency reports that almost a billion yards of burlap have been purchased privately in India for shipment to this country during this year. Almost 600,000,000 yards had already been marked for shipment to the U. S. through July and there were firm commitments for the remainder, plus more than 60,000,000 yards earmarked for shipment early next year. Shipments of burlap from India are controlled by the government of that country through an export quota system.

In announcing the increased allocations to U. S. bag makers, CPA said the Government stockpile amounted to 17,000 bales, was "too small to warrant the expense of handling it," and that there was "no longer any reason for maintaining a stockpile." At the same time, however, CPA pointed out that restrictions on end use of burlap are still in operation (as they have been since December 22, 1941).

● **Lead Supply Half of Demand**—Any appreciable relaxation of end uses for lead, now channeled principally to battery and paint makers, appears to be remote. CPA reports that July lead imports are estimated at 8,700 tons; June at about 6,000; but that these figures, plus domestic production, still come to only about half the current demand. The agency said that requests for 70,000 tons of lead were made for July, but that many of the individual demands were reduced. Even so, it was necessary to "borrow" 6,000 tons from the Metals Reserve Corp. in July—to be replaced by imports later.

Domestic lead production is estimated by CPA to be about a 350,000-ton annual rate, compared with 387,000 tons in 1945. A large part of the slump is attributable to strikes. Government stocks have dropped from 100,000 tons at the beginning of this year to about 38,000 tons at the end of July.

● **Burlap and Jute**—Bag makers and other burlap users have been buying, since August 1, the 265,000 rolls of burlap (which cost the Government $200,) offered for sale on that date.

Meanwhile, because of the short supply and unequal distribution of raw jute in this country, Civilian Production Administration has directed WAA to reserve 5,000,000 lbs. of raw jute for sale to manufacturers who might otherwise be forced to shut down production.

● **Records Must Be Kept**—Despite the death of the OPA, manufacturers, wholesalers and retailers, and all other persons required under price control regulations to have kept records must preserve them until July 1, 1947.

OPA pointed out that Section 1 (b) of the Emergency Price Control Act of 1942, as amended, provides that all regulations, orders, price schedules and requirements shall be treated as remaining in force for the purpose of sustaining any proper suit, action or prosecution with respect to offenses committed or rights or liabilities incurred on or before June 30.

● **Lead Set Aside**—To provide a more equitable distribution of lead, CPA ordered, effective August 1, 25% set aside of all primary lead production.

The "set aside" highlighted a revision of the lead conservation order (M-38) which also reduced quotas of lead for storage batteries and established allocations for the third quarter of this year. Because of labor-management difficulties which have lowered domestic lead production, together with reduced imports, allocations for the third quarter have been reduced to 217,000 tons, compared with 232,000 tons in the second.

In addition, hardship cases were aided during the month of July, by a limited allocation of lead which CPA made available to those manufacturers unable to obtain the metal from regular suppliers.

Lead quotas for the third quarter remain the same as in the second for closure spout containers, collapsible tubes, etc.

● **Food Processors Happy**—Any fears that food processors had entertained about meeting seasonal demands for containers, particularly tin cans, shipping cases and other requirements, appear to have been allayed, according to representatives of the food processing industry here.

At the same time there are no outcries, either as to price or as to supplies, in the fields of glass, metal or shook.

It is felt in most offices here that the Bolivian tin agreement will be signed shortly, probably at a 10% increase in price, and that this will contribute even more toward easing the can situation.

A personal observer who visited the East Indies reported that the mines were not in as bad shape as had been reported.

It displays what it protects...

...that's why Eastman Acetate Sheet does such an effective selling job

Packages of Eastman Acetate Sheet, heavy-gauge for long wear, do much more than protect stock against dust, shopwear, handling . . .

Individual "show-cases," of sparkling optical clarity, they present products attractively, at their most convincing best. They help customers to choose, to buy. And they give merchants the kind of display they want . . . the kind that helps them to *sell* . . .

The versatility of Eastman Acetate Sheet, its toughness, transparency, and dimensional stability give it many other packaging uses. It can be drawn, beaded, folded, scored, crimped, stapled, and joined with solvent-or glue-type adhesives. Beautiful printed effects are readily obtained. Rolls or sheets are supplied in varying gauges, and in three types—clear transparent, matte, and colored translucent.

Cellulose Products Division
Eastman Kodak Company, Rochester 4, N.Y.

While our current supply is inadequate to meet the increasing demand for Eastman Acetate Sheet, the Kodak Transparent Packaging Laboratory in Rochester is available for demonstrating methods of fabrication.

EASTMAN ACETATE SHEET

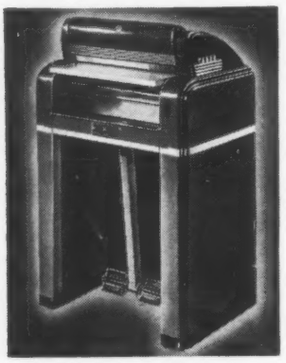
Attracts . . . Protects . . . Sells

Kodak

Equipment and Materials

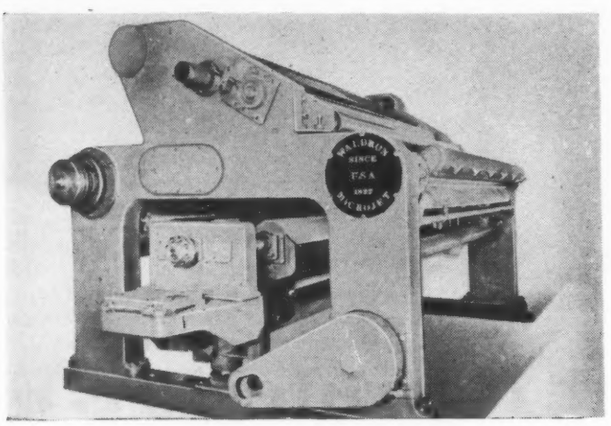
MACHINE FORM-FOLDS PLASTIC SHEETING

Taber Instrument Co., North Tonawanda, N. Y., announces the availability of its "Thermofold" machine for fabricating thermoplastic sheeting ranging from 0.005 to 0.020 in. in thickness into a "U"-type, 180°-fold, with the sides tight together. This hand-fed and operated unit is said actually to mold the sheeting, by means of thermostatically controlled heat, from blank forms without tearing, cracking or opening up of the material. Speed range is about 700 "formed folds" per hour and, when folding in multiples is practical, this rate of output can be increased.



NEW PAPER COATING MACHINE

The "Microjet" Coater, recently developed by John Waldron Corp., New Brunswick, N. J., is said to constitute the first complete coating machine, replacing the line of individual pieces of equipment that heretofore have been assembled for such work. By means of this machine, the coating is applied through the medium of a roll in an excess amount. Then the coating head,



which is an air blade fitted with a slot, planes off the amount of coating not needed and the amount of coating left on the surface of the paper is uniformly distributed. Equipment includes a specially designed flying splice unroll stand; the "Microjet" with air compressor and tension control attachment; conveyor-type air dryer; a tension control unit and an automatic winder.

SPANGLED DECORATIVE FINISH

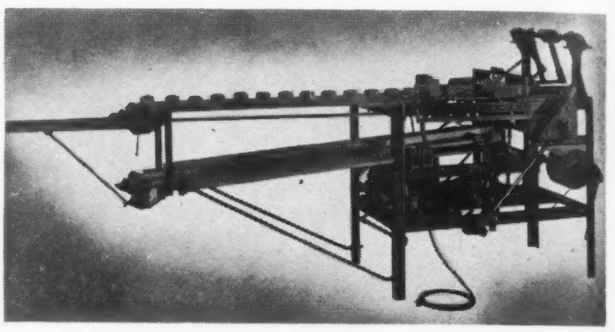
"Cellophane Spangles," a surface coating consisting of very finely cut particles of cellophane is now being produced by Rayon Processing Co. of R. I., Inc., Central Falls, R. I. These spangles when applied to a surface give it a distinctive sparkle, due to the reflection of light by the millions of tiny facets. It may be used on box papers, boxboard, wood, textiles and glass.

PYROXYLIN COATED PAPER AGAIN AVAILABLE

Holyoke Coated & Printed Paper Co., Inc., New York, announces the availability of its line of Pyr-O-Sheen paper—a coated sheet treated for high gloss and then Pyroxylin coated for a washable surface, discontinued during the war. It is said to be resistant to water, soil and abrasion and may be printed.

WRAPPING MACHINES

A new low-cost fully automatic wrapping machine, designed to handle produce, baked goods and similar products in trays or cartons, is offered by the Knapp Mfg. Co., Los Angeles. Known as the "Knapp-Wrapp," the machine is said to handle any type of full overwrap and heat-sealing function. Folding assembly, however, is limited to specific package sizes and is set up at the



factory to conform with predetermined needs. The machine is said to incorporate a number of unique features among which are specially designed and patented cooling fins which rapidly dissipate package heat through radiation; simplified paper feed which eliminates counter weights and rollers usually used to maintain tension on the roll; and switches which automatically stop and start the packaging operation in the event timing is thrown out because of a missing package. This permits the machine to operate without attention, away from the packing tables. Speed range is from 40 to 50 packages per minute.

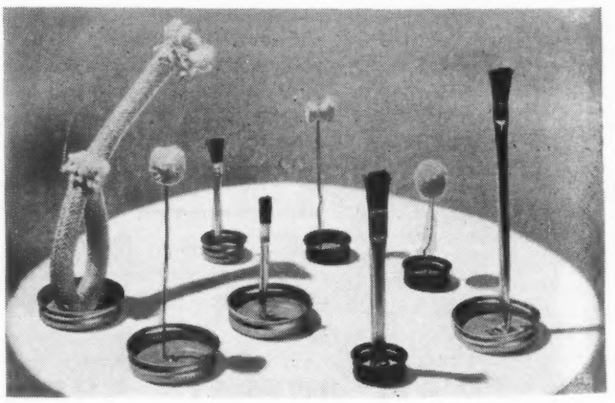
Also now available is the company's "Folder-Sealer," a hand-operated package-wrapping unit equipped with precision-built folding mechanism and thermostatic heat-sealing control.

NEW TRADE NAME

Celanese Plastics Corp., New York, has announced that after August 1st their ethyl cellulose materials will be known as "Celcon," in order to simplify the identification of their growing family of cellulosic plastics.

APPLICATOR CLOSURES AVAILABLE

This extensive line of applicator-type closures, with brushes, daubers and wicks, is now in production by the Applicator Co., Brooklyn, N. Y.; caps are supplied by the Crown Cork & Seal Co., Baltimore, Md.



Click a Sale

WITH A

Beetle Plastic Package

Tayton's Technatint Cake containers are molded of BEETLE plastic by the Victor Metal Products Corp.

Take a counter display of colorful BEETLE* plastic cosmetic containers. It's an attention-getter. When a woman stops and picks up one of the packages, she likes the "feel"... the smoothness... the lack of weight. When she opens it, she likes the way it slides open and shut... the way it fits. She's "sold" on the package before she buys, and after.

That's one reason more and more women are saying, "I'll take Tayton." The Tayton Technatint Cake is put up in an attractive BEETLE container. But that's only *one* reason why BEETLE is the packaging choice of the Tayton Company and many other leading cosmetic firms. BEETLE is chemically inert to protect delicate cosmetics. It's strong, yet light. It's the plastic that's *all color in all colors.* Low in cost. Easy to mold.

Consult your molder, or ask us, about using BEETLE for your packaging. You'll find it a good salesman for your product. **Reg. U.S. Pat. Off.*

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Plastics Division
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Cyanamid Plastics
BEETLE* · MELMAC* · MELURAC* · LAMINAC* · URAC*

Plants and People

Kenneth C. White, general sales manager of the **Libbey glass division of Owens-Illinois Glass Co.,** has been made sales promotion manager of the glass container division succeeding **Howard Trumbull** who resigned recently to form **National Family Opinion,** a consumer research organization.

Robert L. Lee has been appointed to the post of general sales manager for **Shellmar Products Corp.** with headquarters in Mount Vernon, Ohio. Mr. Lee has been territorial representative in the New York area and more recently sales manager of the eastern division of the company.

Robert L. Lee

Harris-Seybold Co. announces the formation of a new Pacific sales district under the direction of **William Guy Martin,** vice-president. **Ren R. Perry** has been promoted to manager of the western district with **G. D. Baber** as assistant.

The Container Testing Laboratories, Inc., has announced the following personnel changes: **Charles J. Zusi,** vice-president, will be in charge of shipping container testing; **Alfred W. Hoffman** has been appointed manager of the New York Laboratory, and **Arthur C. Gault** will assume responsibility for quality control with fibre box manufacturers.

Marathon Corp., Menasha, Wis., has announced the election of **Leo E. Croy** as executive vice-president. **Donald A. Snyder** has been appointed to Mr. Croy's former post and **Roy J. Sund** is now a vice-president in charge of all manufacturing, except chemicals. The activities of Marathon's product development department have been expanded to include sales engineering with **Frank L. Broeren** in charge. **C. W. Grafrath** has joined the sales force of the specialty packaging division and **Robert C. Clark** has been appointed to direct promotional activity on heat-sealing glassine bags.

The Jesse Jones Box Corp. of Philadelphia, manufacturer of styled packages, announces the purchase of the silverware chest department of **Henry H. Sheip Mfg. Co.** as well as its removal to new quarters at 2nd and Filbert Sts.

E. G. Mullen has resigned his position with **W. Ralston & Co., Inc.,** of Niagara Falls. Mr. Mullen was a plant manager and technical director for the Ralston organization. During the war, he was a consultant of the Container Coordinating Committee of the WPB. His future plans have not yet been announced.

Container Corp. of America's board of directors has elected **Walter P. Paepcke,** president, to the newly created office of chairman of the board and chief executive officer of the company. **Wesley M. Dixon,** vice-president, has been elected president and his former divisional responsibilities divided between **J. V. Spachner** and **I. C. Keller.**

Southern Paperboard Corp. has elected **Ernest Rossiter** president.

Watson-Standard Co. of Pittsburgh has expanded its Vyncote division in order to meet increasing demands for its series of vinyl plastic coatings.

Louis A. Von Till, formerly a contributor to *Modern Packaging Catalog,* announces the opening of **Closure Consultants & Designers, Inc.,** at 170 Broadway, New York City.

W. B. Lincoln, Jr., technical manager of **Inland Container Corp.,** has received an "official commendation and praise for outstanding performance of duty" from the War Department Army Service Forces for his assistance in solving GMC packaging problems.

W. B. Lincoln, Jr.

The Edward Ermold Co., manufacturers of labeling machines, has elected **Donald Donaldson,** vice-president.

American Can Co. has started work on new plant facilities at Maywood, Ill., and added to equipment at four existing plants, to increase capacity for production of fibre milk containers.

International Paper Co. has purchased **Single Service Containers, Inc.,** manufacturers of paper milk containers.

Henry K. Watson II has been placed in charge of foreign and domestic sales of the special coatings division of the **Watson-Standard Co.,** Pittsburgh.

Arthur A. Friedberg will head the eastern sales offices of the **W. Braun Co.** with offices at 347 Fifth Ave., N. Y. C.

Smith-Stewart Paper Products, Inc., converters of fancy gift wrappings has been formed, located at 762 Wythe Ave., Brooklyn 11, N. Y.

John J. Nagle, president of **Crown Cork & Seal Co., Inc.,** has been also elected chairman of the board of directors, to fill the vacancy occasioned by the death of **Charles E. McManus. Russell B. Gowans** succeeds as director.

Norwood Engineering Co., manufacturers of printing, embossing and specialty machines, appoints **George J. Prager,** president and general manager.

Metro Carton Co. have moved their office and factory to **24 Binford St., Boston 10, Mass.**

Packard Container Corp., a new organization for the production of spiral wound paper tubes, metal end and all paper containers, has acquired **The Cleveland Container Co.'s plant** at West New York, N. J. The officers are: **H. K. Ewald,** president; **A. E. Schoenfeld,** treasurer; **Irving Rotwein,** secretary.

Justin J. Wetzler has been appointed director of engineering, and **J. Harvey Chandler** chief engineer of **Barnes & Reinecke,** Chicago, Ill.

C. A. Swanson & Sons, Inc., packers of poultry products, have appointed **Crawford Pollock** sales promotion manager. He was formerly with the **cellophane division of Du Pont.**

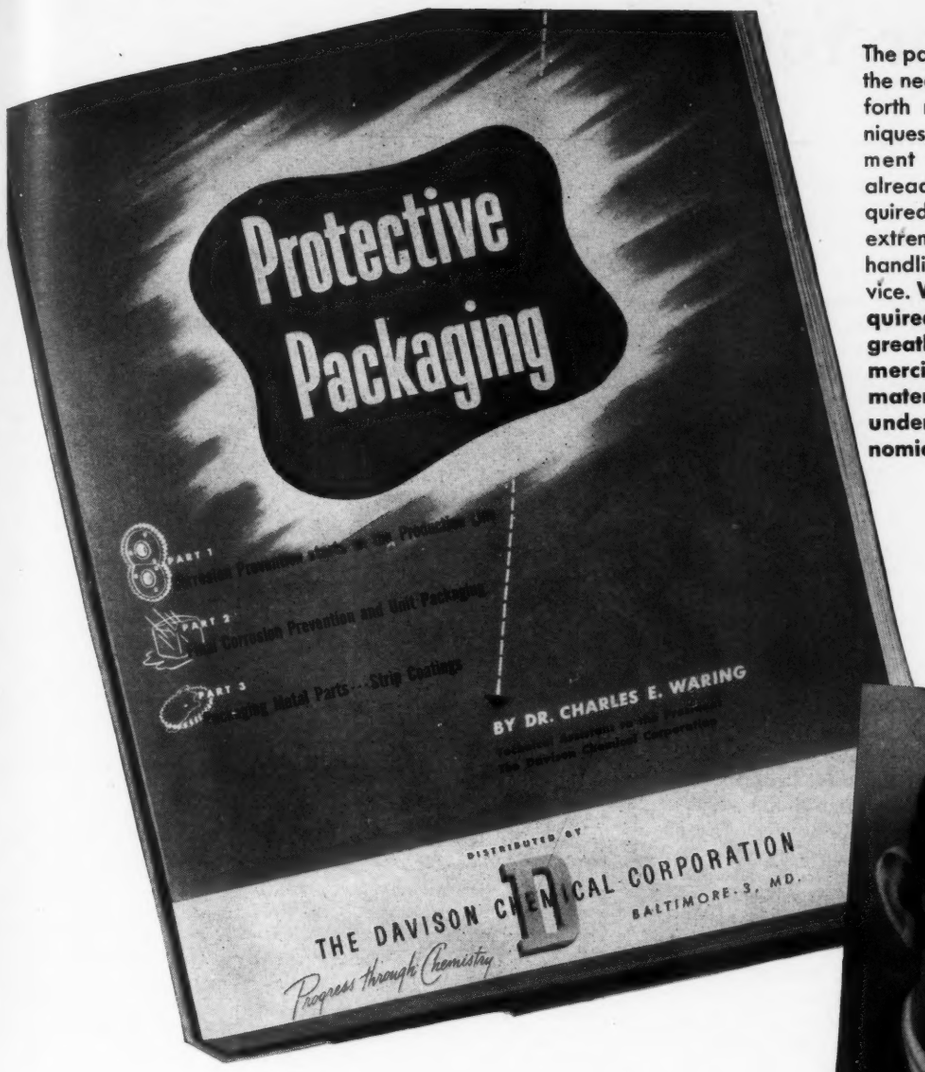
United Paperboard Co., producers of cartons for the food, drug, automotive parts, toy, cosmetic and other industries, have opened a plant at Springfield, Ohio.

St. Regis Paper Co. has purchased the **Florida Pulp & Paper Co.,** at Pensacola, to provide additional paper to meet the needs of multiwall paper bag consumers.

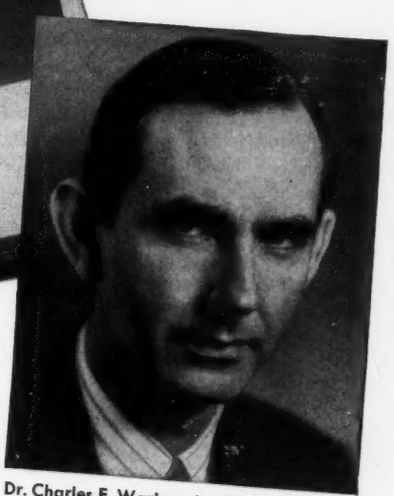
Leonard J. Doyle, general sales manager of **Union Bag & Paper Corp.,** New York, has been elected vice-president in charge of sales, and **Donald J. Hardenbrook,** is now a member of the board of directors. Union also announces the construction of a new plant at Savannah, Ga., for the manufacture of corrugated shipping containers.

Leonard J. Doyle

Frank Greenwall, president of **National Starch Products, Inc.,** returned recently from a flying visit to the companies English and Dutch factories which he reports are undamaged. Shortly after his return he had an accident with his tractor at his farm. Injuries were serious but he is making a fast recovery.



The packaging of metal parts to supply the needs of a global war has brought forth many new materials and techniques, and has required the improvement of many others which were already in existence. The standards required were very high because of the extreme conditions of exposure and handling encountered in military service. While the conditions which required these high standards will be greatly lowered in postwar commercial packaging, many of the materials and techniques developed under war conditions will find economical applications in modified form.



Dr. Charles E. Waring, director of research, The Davison Chemical Corporation, is one of the nation's outstanding authorities on corrosion-proof packaging.

Davison—through constant research—has adapted wartime specifications for the prevention of rust and corrosion and, of course, mildew and mold, until today Davison field engineers can show you how you can meet your problem efficiently and economically.

Your copy of Dr. Waring's booklet may be obtained by writing The Davison Chemical Corporation, Department B. This is a complete set of articles which appeared in Modern Packaging and constitutes a practical text book on the subject.

THE DAVISON CHEMICAL CORPORATION

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Canadian Exclusive Sales Agent for PROTEK-SORB silica gel • CANADIAN INDUSTRIES LIMITED • General Chemicals Division

For Your Information

The R. A. Jones & Co., manufacturers of automatic machinery, are building a constant motion cartoner to handle two sizes of baby oil and one of baby lotion to be installed in the new **Johnson & Johnson** plant at Cranford, N. J.

The new **MCA Manual Sheet D-50** covering the handling of fibre drums is now available from the **Manufacturing Chemists' Assn.** Washington office, priced at 18 cents each. The booklet covers all phases of fibre drum packing, shipping and storing, including carloading and unloading, bracing, filling and sealing, recommended handling equipment, stacking and emergency repairs.

"Modern Organic Finishes" by **Rollin H. Wampole** is a presentation of the latest practical commercial methods of preparing surfaces for finishing, applying organic, protective and decorative finishes and drying these finishes, and how these methods apply to many types of products. Of especial interest to the packaging field is Section V which covers finishing processes including paper, cardboard and fabrics, sheet steel products, plastics, etc. Published by the **Chemical Publishing Co.,** Brooklyn, N. Y., the price is $8.50.

The American Standards Assn. has announced the publication of its **1945–46 Year Book,** the first since 1938. In addition to information about the association itself, the book contains a section devoted to approved American Standards and projects under development. Copies may be obtained free of charge from the association, 70 E. 45th St., New York 17.

"The ABCs of Modern Plastics" is a new 36-page booklet published by the **Bakelite Corp.** which tells the story of plastics in a way clearly understandable to the high school student as well as the business executive. Complex technical processes are described in terms of everyday living and further explained in colorful charts and lively illustrations. Copies may be had free of charge from the company, 300 Madison Ave., New York 17.

The B. F. Goodrich Co., Akron, Ohio, has published a folder on its line of power transmission belting for drives of any size. The folder pictures and describes both flat and V-belting for various services, as well as sheaves, belt dressings and the Plylock method of making flat transmission belts endless.

The American Machine & Foundry Co. has released a series of six folders describing the **Rose** candy packaging machinery. Copies will be supplied by the company, 511 Fifth Ave., N. Y.

"Robots at Work" is the title of the full-color, 16-mm. motion picture prepared by the **F. J. Stokes Machine Co.,** which tells the story of automatic plastic molding. It shows hand molding, manually operated, semi-automatic and automatic presses. Prints can be had from the company, Tabor Road, Phila. 20.

A $12,000 fund contributed by members of the wirebound box industry for the establishment of a scholarship in the name of **E. E. Ames,** retiring vice-president of the **General Box Co.,** was presented to **Wabash College** as a high-light of a two-day meeting of the **Wirebound Box Mfgrs. Assn.** in Chicago.

A bibliography of articles and books relating to pulp and paper manufacture covering the years 1936 to 1945 is in the process of preparation by the **Technical Assn. of the Pulp & Paper Industry.** A limited number will be available at $10.00.

Bulkley, Dunton & Co., Inc., New York manufacturers of display materials, has issued its **Fall-Winter Display Folio** featuring twenty different display materials in dimensions most suitable for displays. The folio is being distributed by company offices in New York, Chicago and Los Angeles.

What's doing

Aug. 25–30—**American Pharmaceutical Assn.,** William Penn Hotel, Pittsburgh, Pa.
Sept. 10—**Liquid Tight Paper Container Assn.** (regular monthly meeting), Waldorf-Astoria, New York.
Sept. 10–14—**National Chemical Exposition** and meeting of **American Chemical Society,** Chicago Coliseum, Chicago.
Sept. 13–14—**National Paper Box Mfgrs. Assn.,** Southern Division, Grove Park Inn, Asheville, N. C.
Sept. 15–19—**Super Market Institute,** 9th Annual Convention, Hotel Pennsylvania, New York.
Sept. 16–20—**The Instrument Society of America,** First National Instrumentation Conference & Exhibit, William Penn Hotel, Pittsburgh, Pa.
Sept. 19–21—**Marking Device Assn.,** 1946 National Convention, Edgewater Beach Hotel, Chicago.
Sept. 21–26—**National Wholesale Druggists Assn.,** Atlantic City.
Sept. 26–28—**32nd National Conference on Weights & Measures,** Mayflower Hotel, Washington, D. C.

A souvenir booklet celebrating the 50th anniversary of the **Paper Package Co.,** Indianapolis, Ind., which illustrates the progress of the company was published recently.

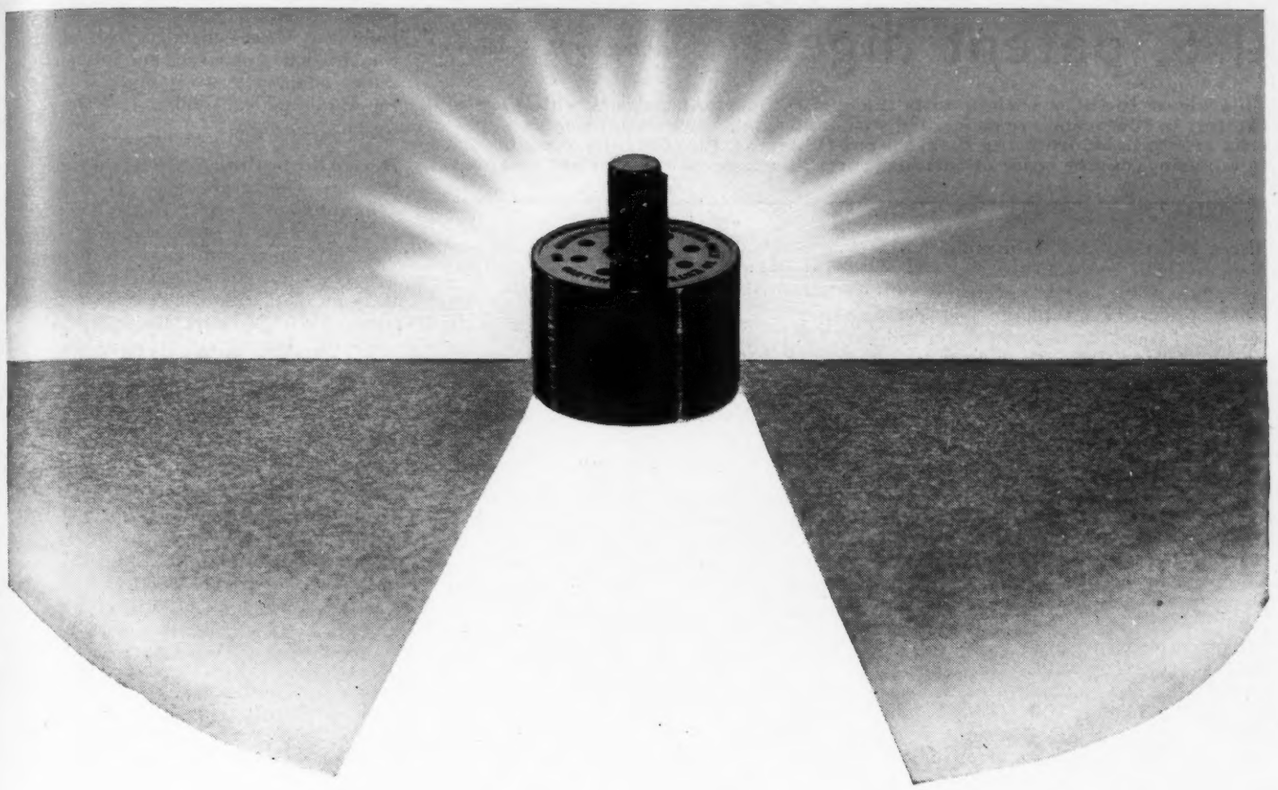
The annual meeting of the **American Society for Testing Materials,** held in Chicago throughout the week of June 24, was attended by 1,825 members who indicated intensive interest in the society's expanding work on specifications and tests for materials and methods of evaluating assemblies of these materials in various forms. **Arthur W. Carpenter,** manager of testing laboratories, **The B. F. Goodrich Co.,** was elected president and **R. L. Templin,** assistant director of research and chief engineer of tests, **Aluminum Co. of America,** vice-president.

More than 3,500 candy manufacturers from all over the country attended the annual convention of the **National Confectioner's Assn.** in Chicago, June 24 to 28. **Philip P. Gott** was re-elected president of NCA and **Arthur L. Stang,** Shotwell Mfg. Co., again chosen to serve as secretary-treasurer. Two new vice-presidents are: **W. Melville Cribbs,** general manager, **National Candy Co.,** and **Robert H. W. Welch, Jr.,** vice-president and sales manager, **James O. Welch Co.**

William J. Terrell has joined the staff of the **Toilet Goods Assn., Inc.,** as assistant to **S. L. Mayham.**

The Forest Products Packaging Council has been formed by a small group of packaging specialists who staffed the materiel containers division of the **Forest Products Laboratory** during the war to preserve and develop the fruits of its wartime association. The council held its first annual meeting in Madison recently with 56 members present and elected **A. A. Anderson, Corrugated Container Co.,** president. **Franklin E. Rolston, Dearborn Chemical Co.,** is vice-president and **T. A. Carlson,** chief of the materiel containers division at the laboratory, is secretary-treasurer.

Carl E. Thoresen, secretary and comptroller of the **Cambridge Paper Box Co.,** has been elected treasurer of the **Boston Chapter of the Nat'l. Assn.** of Cost Accountants.



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They are produced with utmost efficiency and economy . . . according to the high standards of strength, uniformity and attractiveness we have always maintained for all our plastic closures.

For small thermo-setting plastic items, we suggest you write to our Plastics Division, for making small plastics in big volume is our specialty.

LOOK FOR THIS TRADE MARK

PLASTICS DIVISION

OWENS-ILLINOIS GLASS COMPANY

TOLEDO 1, OHIO BRANCHES IN PRINCIPAL CITIES

U. S. patent digest

edited by H. A. Levey

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at ten cents each in currency, money order or certified check; postage stamps are not accepted.

Sheet Printing and Crimping, A. L. Hess (to Ditto, Inc., Chicago, Ill.). U. S. 2,400,991, May 28. A method of providing assemblies of a plurality of sheets capable of being handled as a single unit, which comprises perforating all but one of the assembly of sheets with at least one perforation, stacking the sheets with the unperforated sheets beneath the perforated sheets of the unit, transferring the sheets by applying a suction over the perforations.

Gummed Products, F. W. Humphner (to Mid-States Gummed Paper Co., Chicago, Ill.). U. S. 2,400,995, May 28. A remoistening gummed paper product comprising a paper sheet, and a layer of dry remoistening adhesive on said sheet, said sheet and the adhesive thereon being provided with a plurality of capillary apertures extending therethrough, the adhesive adjacent the apertures being slightly raised above the surface of said layer to act as a tread to aid surface to pick up a greater quantity of moisture from a moistening surface.

Combined Package and Serving Container, W. H. Barton and H. M. Snell, New York. U. S. 2,401,038, May 28. In a combination packaging and serving container for food products to which a liquid is added when served, a container body including a bottom wall and an upwardly flaring marginal wall and a combined cover and saucer defining member therefor including a bottom wall and an upstanding outwardly flaring marginal wall of an external size and shape to fit snugly within the upper portion of the container body to serve as a cover therefor and which is of such a depth as to confine the contents against undue freedom of movement, and extending rim to prevent contents from being spilled.

Bottle Crate, L. A. Fordon, Detroit, Mich. U. S. 2,401,063, May 28. A bottle crate having tapered side walls permitting the nesting of superimposed crates comprising top and bottom frames, an intermediate border frame adjacent to but spaced from the bottom and vertical side slats arranged on the outer sides of the bottom frame and intermediate border frame and on the inner side of the top frame, sets of bottom members secured to the bottom frame, one set of bottom members crossing another to provide supports for bottles in cells in the crate.

Double-Ended Bag and Method of Making Same, H. A. Rohdin (to M. M. Rohdin, Glen Ridge, N. J.). U. S. 2,401,109, May 28. A method of making bags comprising: continuously forming a gusseted tube from a web of flexible material, controlling the forming operation to bring the margins of the web together with inner surface of said margins in face to face contact adjacent one gusset fold and with the area of such face to face contact lying outside the body of the bag.

Bag and Method of Making Same, H. A. Rohdin, Glen Ridge, N. J. U. S. 2,401,110, May 28. A container formed of flexible sheet material and having a plurality of contents receiving compartments, each compartment being closed on three sides and having an open mouth.

Packing Material, W. J. DeReamer (to Mapes Consolidated Mfg. Co., Griffith, Ind.). U. S. 2,401,141, May 28. A packaging material in the form of a cushion pad embodying therein a rectangular sheet-like body portion having rows of spaced apart substantially square cup-like receiving seats thereon, each of a relatively shallow inverted pyramidal shape and including four full counterpart sides which meet at the corners and slope downwardly.

Bottle Carrier, M. E. Holy (to Container Corp. of America, Chicago, Ill.). U. S. 2,401,158, May 28. A bottle carrier formed from foldable paperboard comprising a handle portion and a bottle receiving compartment, the bottle receiving compartment comprising two oppositely extending top panels hingedly carried by said handle portion.

Continuous Film Processing Apparatus, V. E. Pratt & D. E. Reed (Reed assigned to Pratt, Norwalk, Conn.). U. S. 2,401,185, May 28. In film processing device, a series of receptacles for containing processing fluids, a supporting frame, guide means comprised of a series of upright and inverted U-shaped members secured to said frame, said members each including a depressed web portion, and adapted to support and engage the edge portions of the film.

Inflatable Protective Container, R. S. Colley (to B. F. Goodrich Co., New York, N. Y.). U. S. 2,401,230, May 28. An inflatable container for protecting a body, said container comprising a closed hollow member including portions for enclosing said body, body-supporting means suspended from said wall portions within said hollow member for yielding supporting said body, and means for access of the hand of an attendant to said hollow member, and means for holding the hand against outward removal under its tendency to be ejected by air pressure within the container.

Mechanism for Punching to Interlock Sheets of Material, A. Pelikan (to Federal Carton Corp., New York, N. Y.). U. S. 2,401,270, May 28. As an addition to a machine which cuts and scores respective sheets and vertically piles the cut and scored sheets in a space in which the piled sheets are vertically aligned by movable jogged means which are movable towards and away from aligning position, the combination of indenting and interlocking means adapted to exert pressure on the top of said pile and to interlock the piled sheets.

Device for Sealing Cylindrical Cans or Similar Containers, G. K. Charles, Wincanton, Somerset, England. U. S. 2,401,461, June 4. A machine for sealing cans or similar containers by applying adhesive tape to the junction of the lid and body of the can, comprising a track, means for rolling cans along the track, a pressure roller initially situated over the track, a tape guide for holding adhesive tape over the track in front of the pressure roller for engagement with the advancing can.

Bottle Cap Forming and Sealing Machine, W. B. Nelson, J. Johnse, H. F. Dyruff, and S. R. Bell (to Florence M. Shelley, Basking Ridge, N. J.). U. S. 2,401,499, June 4. An apparatus for forming a pliable disc which has been loosely seated on the mouth of a bottle into a skirted cap and for simultaneously sealing the same about said mouth.

Preheater for Bottle Caps, H. E. Rue (to Pabst Brewing Co., Milwaukee, Wis.). U. S. 2,401,511, June 4. In a machine for crowning bottles with plastic caps, an elongated table, a cap conveyor belt arranged at one end of the belt and extending transversely thereof, means for pushing transverse rows of caps off of the belt onto the table and for feeding the caps along the length of the table, and means for heating the skirts of the caps to a moldable condition as the same are fed along the table.

Bottle Carrier, J. E. Miller, Chicago, Ill. U. S. 2,401,578, June 4. A bottle carrier comprising a main body plate, formed at a plurality of points with perforations arranged in longitudinal series and capable of freely passing bottle necks in a common spaced relationship, and a spring retainer associated with each longitudinal series of said perforations comprising parallel spring wires kinked at points intermediate the wire length and immediately adjacent the perforation in such manner that the bottle necks may be projected between the wires at the kinked points and these will spring under the necks.

Display Card, E. C. Chittum (to Chittum-Kidd Co., Inc., Baltimore, Md.). U. S. 2,401,615, June 4. In a combined display card and merchandise carrier, an integral sheet of stiff, flexible and strong cardboard comprising a plain display card portion having at least one straight boundary, a tab portion extending from said straight boundary and having parallel sides perpendicular thereto and equipped with tab so when same is bent it can form a merchandise holding sleeve.

Capsule Structure, C. C. Cochran (to Gelatin Products Corp., Detroit, Mich.). U. S. 2,401,617, June 4. A dispensing capsule comprising a collapsible capsule shell provided with a content discharge opening and a layer of material extending over and closing said opening, material of said layer differing from material of shell

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in that it is more readily soluble to the point of rupture.

Method of Vacuum Sealing, C. Herzog and P. A. Hauck, Union, N. J. U. S. 2,401,638, June 4. The method of vacuum sealing a receptacle having an opening, comprising attaching a tubular thermoplastic pellet to the receptacle for forming a vacuum tight joint and placing the bore of the pellet in communication with the opening, bringing a tubular vacuum connection into contact with the free end of the pellet and forming a substantially vacuum tight connection, between same.

Box, I. Robbins, Chicago, Ill. U. S. 2,401,664, June 4. For use with a packed box, an oblong quadrilateral open slot in each of the end walls of the box, a handle comprising a body portion and a tapering head at each end of the body portion, the length of the head being slightly less than the diagonal length of the slot and slightly greater in length than the length of the slot, and the head being insertable in an angular position through said tapering slot while contacting with the inner surface of said end wall.

Bottle Carrying Device, B. R. Bradley and R. C. Bradley, Pittsburgh Pa. U. S. 2,401,679, June 4. A bottle carrier comprising an elongated intermediate body section having opposite sides thereof provided with socket portions shaped to receive the upper enlarged ends of beverage bottles.

Container Lifting and Emptying Machine, S. H. Harrison, Caldwell, N. J. U. S. 2,401,731, June 11. A lifting and emptying machine for a container for flowable material which comprises a rotor, a lifting member including a base for engagement under the bottom of the upright container and a cradle element extending from a part of said base that is at the rear of the container when the machine is in operation and extending toward the center of the rotor, and so operated that the lifting member clears the container as the rotor continues to rotate.

Carton, A. E. Bentham (to the Baltimore Paper Box Co., Baltimore, Md.). U. S. 2,401,742, June 11. A carton formed of stiff paper material and comprising an integral bottom, opposite side and cover means, the bottom being a one-piece element extending from side to side and end to end of the carton, and equipped with dividers.

Cushioned Shipping Container, R. Kuhlman (to Tung-Sol Lamp Wks., Inc., Newark, N. J.). U. S. 2,301,765, June 11. A shipping container of rectangular shape comprising an outer casing and an inner liner unit, the latter having side walls corresponding to the side walls of the outer casing, and the inner liner having triple folds which form a cushioning closure for the top of the liner and the side walls of the outer container.

Collapsible Tube, W. Zahara, Chicago, Ill. U. S. 2,401,784, June 11. A flexible container, adapted to be rolled to flatten the same and thereby dispense its contents, and comprising an elongated sheet of cellulose material folded to form a body of general hexagonal form in cross section, and equipped with a metallic strip running longitudinally from a point near the top to the bottom edge.

Folding Box, D. Levkoff, Brooklyn, N. Y. U. S. 2,401,944, June 11. A folding box comprising a single blank of cardboard which is cut, scored and folded to provide a rectangular shaped bottom wall panel, and when folded being secured by gluing to glue flaps and equipped with corner folding webs.

Flexible Tube, T. Marinar (to American Cyanamid Co., New York, N. Y.). U. S. 2,401,949, June 11. A flexible multi-part tube including a main spiral formed of a strip of material the edges of which are spaced apart, an overlay spiral formed of a strip of material overlapping portions of two convolutions of the main spiral and covering the space between their adjacent edges, a shim spiral formed of a strip of material secured between the main and overlay spirals, and an elongated constraining strip secured to the outside of the overlay spiral.

Apparatus for Compressing and Heating Electrically Thermoplastic Materials, G. J. Walton, J. C. Quayle and P. Jones (to British Insulated Cables Ltd., Ptescot, Lancashire, England). U. S. 2,401,991, June 11. Apparatus for jointing strips of thermoplastic insulating material by heating the overlapping end thereby, by subjecting them to a high-frequency electric field and compressing them, welding them together.

Feed Control Device, O. F. Goepfert (to Champagne Paper Corp., Pisgah Forest, N. C.). U. S. 2,402,037, June 11. A manually operated feed control device comprising as a unit in a machine a rotatable shaft, a circular, peripherally and finely fluted member fixedly mounted thereon, a pawl held in peripheral contact with said fluted member, and a gauging segment for said lever, and adjustable means at each end for limiting movement of the lever in opposite direction, and equipped with hand wheel and brake.

Packeting Machine for Cigarette Booklets or Like Articles, G. D. Horgan (to Hedwig Gamble, London, England). U. S. 2,402,047, June 11. In a machine for packeting booklets of cigarette papers and like, an intermittently moving conveyor, platforms carried by the conveyor and having ledges across their tops at the leading and trailing ends thereof, and spaced fixed guide bars overlying the side edges of the platforms and coacting with the edges to form packets within which wrappers for the packets are formed.

Display Box, H. L. Magill, Chicago, Ill. U. S. 2,402,062, June 11. An upwardly open display box and means for supporting it in tilted position resting on the forward edge of its bottom wall, said means comprising a foot-piece of flat stock including a cross-member extending parallel to said forward edge, with leg portions bent to extend at right angles to the plane of the cross-member.

Case for Lipstick and the Like, C. Nehrke (to Revlon Products Corp., New York, N. Y.). U. S. 2,402,072, June 11. A lipstick casing having an open end and having an aperture through its wall at the base, an endless band passing through said aperture and over a rounded guiding wall element at the top area of the casing and having lipstick receiving member within casing and secured to said band, and cap secured to said band also.

Bullet Distributor, C. W. Yates and K. J. Yost (to Remington Arms Co., Inc., Bridgeport, Conn.). U. S. 2,402,110, June 11. Apparatus for automatically distributing articles comprising a movable frame, article dispersing means fixed to said frame, article holder, and means for ejecting articles from said holder.

Net and Gross Weigher, E. W. Vredenburg, Berkeley, Calif. U. S. 2,402,217, June 18. A device with a hopper for receiving material and for feeding material through an outlet therefrom to a container positioned to receive a batch of material, electrical means for vibrating said hopper to move material out of hopper.

Bottle Carrier, A. Wesselman, Cincinnati, Ohio. U. S. 2,402,218, June 18. A bottle carrier with bottom and inclined sides having bottle receiving apertures therein, the sides converging above the bottom to provide an apex extending lengthwise of the carrier, a pair of flaps in flatwise contact depending downwardly into the carrier from the apex to provide a partition to separate the bottles.

Bottle Carrier, A. Wesselman, Cincinnati, Ohio. U. S. 2,402,219, June 18. A carrier comprising a sheet material body member having spaced transverse score line providing a base and a pair of upwardly converging opposed side walls, strap members struck from the material of the side walls near the sides thereof and at different elevations on the sidewalls.

Wrapper Sealing Mechanism for Packaging Machines, C. Arelt (to American Machine & Foundry Co., a corporation of New Jersey). U. S. 2,402,231, June 18. The combination with a hollow mandrel adapted to support a pouch formed of flexible sheet material and having end folds overlapped at one end of the mandrel to form the bottom of the pouch, and equipped with adhesive stripe and means for exerting pressure to seal overlapped end folds.

Sealing and Crimping Machine, L. L. Salfisberg, South Orange, N. J. U. S. 2,402,298, June 18. A machine comprising relatively movable jaws to receive material between them to be pressed, and hydraulic pressure means for closing said jaws.

Machine for Applying Labels to Rubber Hose or Cable or the Like, H. O. Bates, Cranford, N. J. U. S. 2,402,357, June 18. A device for marking hose or the like which comprises a roller engageable by the hose, a label magazine, a head including a suction plate means for moving said head from registry with the magazine to registry with the roll to transfer a label from the magazine to the hose.

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Specialty papers . . .

(*Continued from page 140*) between the resin dispersions and hot melts.

A war-time development in the functional paper field involves the use of the Dri-Film process, wherein a thin film of the newly developed silicone resin is deposited on the surface of a sheet of paper. The paper is passed through a chamber containing the silicone resin in vapor form and the resin is precipitated on the surface of the sheet through reaction with its residual moisture. Such a film is not continuous, however, and although the sheet possesses water and oil resistance, it does not offer gas or water-vapor resistance. It possesses some scuff-proof properties, but tends to be brittle.

Packaging paper

It can be seen from the foregoing discussion that it is not generally possible to obtain all the desirable properties in a sheet using any one method of coating or using one specific treating or coating compound. On the other hand it is often unnecessary to put more than one or two functional properties into a sheet for a specific application.

As previously mentioned, there are two major types of coated papers used in the packaging field. The first includes fancy box coverings and special grades of cover papers, the second comprises functional sheets.

Decorative-type papers: For many years the fancy box coverings and special cover papers were used merely for decorative purposes. These sheets were produced with new, striking and attractive designs and were used for box coverings, package wrappings, book, pamphlet and brochure covers, and general papeterie application. Such sheets were made whenever possible with light-fast colors, but, in general, were not required to possess many functional properties.

A new concept of such papers has been growing in recent years, however, and now these sheets are being produced with equivalently attractive appearance and also with limited functional properties. Cover stocks are being produced which are greaseproof and water-resistant, so that they can be handled by greasy fingers or shed any water which is inadvertently spilled on them. They have scuffproof properties, so that if handled they will not show scuff and finger marks. The application of such sheets, therefore, is expanding extensively, and even though they do not in themselves possess the absolute functional values, they allow the package designer to build much more into his unit than was possible before their development.

Functional papers: The new functional papers are the ones into which have been engineered the true functions which differentiate them from their base "papers." These are the materials upon which have been built the tremendous packaging industry. The functions and properties of any sheet can be designed specifically for a given application if the behavior and properties of the coating and treating compounds are understood and equipment available for their application. This is especially important when one considers the specific requirements demanded in a given sheet and then investigates the various types of compounds and attempts to apply them using any but the correct type of equipment.

Some synthetic film-forming resins are incompatible with natural resins and waxes and cannot be applied by a hot melt procedure and still obtain flexible functional films. Other compounds are only soluble in corrosive, highly flammable or dangerous solvents and are limited therefore to applications using dispersions or the organosol technique. If the resin can be dissolved in a solvent-plasticizer mixture, a choice of roll or knife coating must be made, depending upon the equipment available, the necessity for solvent recovery and the film thickness desired. The materials to be used in compounding the coating are important in that the use of large amounts of wax, for example, generally results in poor printing surfaces.

Often it is impossible to obtain all the desired properties and functions in a single coated or treated sheet. Luckily, however, most of the functions are additive and sometimes two or more coatings or treatments of different types can be used to obtain a sheet which will in its totality provide all the desired properties. Often a laminated sheet can be utilized, each of the layers of which can contribute some desired function to the finished sheet (See Fig. 5.) The major requirement in such materials is that the proper functional sheet or layer be placed in the correct position, i.e., the greaseproof side placed where it will contact the grease. When laminations are used, there is also the added advantage of being able to use the laminant to supply a functional property such as grease resistance or water-vapor resistance. A great deal of work has been done on this by producers of coated and laminated glassine.

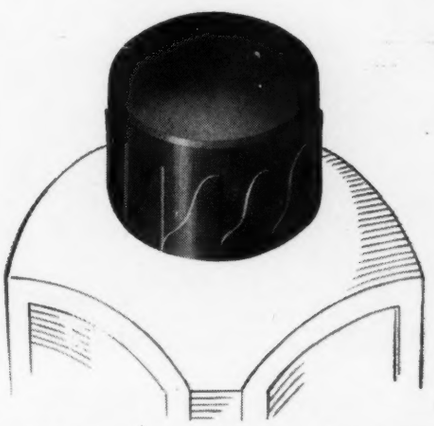
Conclusions

The major conclusions which seem to appear from the experience of the packaging industry during the last few years are that although many stock items are being produced today which have one or more functional or decorative properties, the best method of obtaining the ideal material for a specific problem is to engineer a sheet which will fit the exact requirements of the job. Since the production of functional papers involves expensive coating, treating and processing equipment and operations, there is no need for procuring materials which offer any more functions than are required to do the job. Also, since there are so many ways and means to obtain the required functions a source should be obtained which not only possesses the know-how to produce a given sheet, but also one which has the necessary diversity of equipment and facilities for producing such a sheet by the most economical method. The ideal material should possess the required appearance, properties and functions with a good margin for safety, but should also not contain excess properties which are unnecessary for the required job.

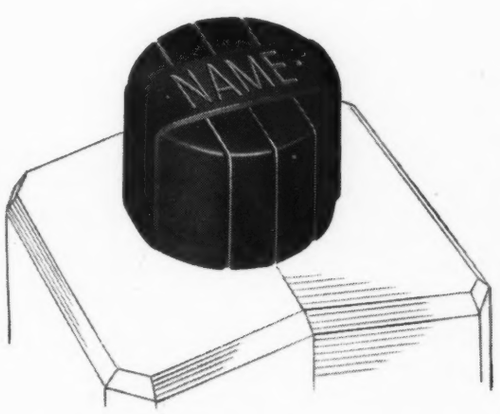
Ideas for dramatizing your private mold caps

GIVE YOUR PACKAGE an exciting new look that will stop shoppers . . . swing the sales to your product . . . with the distinctive beauty of an Armstrong's Artmold Cap. For helpful design suggestions, send sample or drawing of your package to Armstrong Cork Company, Glass and Closure Division, 5908 Prince Street, Lancaster, Pennsylvania.

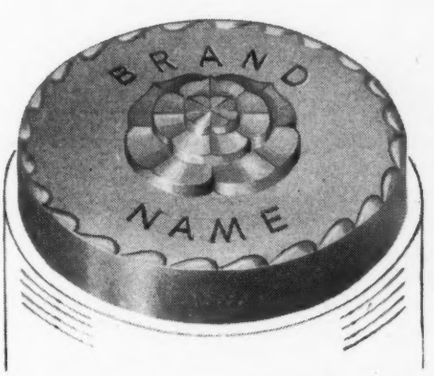
ACCENT THE QUALITY and beauty of your "luxury" items with an individualized cameo Artmold Cap, decoratively embossed with nature or wild life designs of your own choice.



APPEALING "ABSTRACT" PATTERN gives this modern Artmold Cap design eye-catching style, makes it easy to grip and turn. Simple, clean-cut, it builds customer recognition.



YOUR BRAND NAME or trade-mark can be depressed and filled in with color. Raised design gives your package extra height, makes it stand out from competitive products.



DECORATIVE flower-bud design spotlights your brand name. One of many custom-tailored Artmold Cap design possibilities that will add sales-building style and distinction to your package.

ARMSTRONG'S *Artmold* CAPS
PLASTIC

YOUR PRODUCT WILL GO PLACES IN

LUSTEROID

VIALS AND TUBES

They buy your product when it's packaged so they can see it. That's why products go places in LUSTEROID, the crystal-clear plastic vials and tubes.

For all their light weight, these containers are strong, rigid, unbreakable—ideal for product protection and perfect display. LUSTEROID saves you money, too, by cutting handling and shipping costs. Their printability eliminates labeling expense.

All colors to choose from—clear or opaque. Sizes from 1/4" to 1 1/4" in diameter—lengths up to 6". Cork, slip-on or screw-cap closures. Write for details.

LUSTEROID CONTAINER CO., Inc.

Formerly Lusteroid Division of Sillcocks-Miller Company

Office and Factory

10 W. PARKER AVENUE, MAPLEWOOD, N. J.

MAILING ADDRESS: SOUTH ORANGE, N. J.

Pi standard test methods

(*Continued from page 147*) rate is equal to the gain in weight expressed in grams times the factor 1.71. The factor 1.71 is arrived at in the following manner:

$$\text{Factor} = \frac{100 \text{ sq. in.} \times 24 \text{ hrs.}}{68 \text{ hrs. exposure} \times 20.63 \text{ sq. in.}} = 1.71$$

8. Precision and reproducibility

The apparatus described is capable of holding the temperature at 100 deg. F., ±1 deg. F. and humidity at 90% ± 2%. The ability of the equipment to maintain these conditions is dependent upon the skill in adjusting the thermostat, the uniformity of line voltage and room temperatures. The cabinet will show more uniform operating conditions if it is used in a constant temperature room, preferably one operating at a constant temperature range, about 70 deg. F.

Stable and uniform materials can be expected to show repeated permeability values which should check within ±5%. However, many materials will show considerable variation between samples and some drift or variation in permeability values. Accuracy and precision can be increased by being sure that the samples come to constant weight gain in the induction period and by extending the interval between weighings from 68 hrs. to 128 hrs. Such an increase in time is especially useful in critical evaluations of materials having permeability values below 0.1 of a gram. For most materials, however, such precision is unnecessary and undesirable. The values should not be reported beyond the second decimal place and under the normal operating cycle the results can be expected to be accurate to within ± 0.02 gram.

9. Report

The standard procedure for reporting transmission values is as follows: The rate is given in grams per 100 sq. in. per 24 hrs., 100 deg. F., 90% R. H., using calcium chloride in the test cup.

10. Remarks

A. Certain plastic films of appreciable thickness show uniform and stable transmission values and as such may be used as control specimens. For this purpose, it is suggested that 1 mil Saran can be used. Sample cups prepared with normal Saran may be continuously run in the permeability cup without remaking the cups and can be expected to provide uniform results which serve as a secondary check on the continuous operation of the cabinet. Under no circumstances, however, shall the control be used to establish a factor for the correction of the results of other specimens. If for any reason such control samples should show abnormal values, the control should be re-made, using fresh calcium chloride, the same sample and then rerun.

B. Consecutive tests made on some materials indicate

From Automotive parts to Zinnia seeds

THEY GO TO MARKET IN "FLAV-O-TAINER"

A PARTIAL LIST OF PRODUCTS THAT ARE GOING TO MARKET IN THE FLAV-O-TAINER

You'll agree that precision automotive parts and prize-winning zinnia seeds stand about as far apart as any two products could. Yet, the producers of both, selected FLAV-O-TAINER to *protect* them on their way to consumers.

There are good reasons of course: Fine precision parts must be protected from rust, corrosion and dust. FLAV-O-TAINER does it! Seeds of any kind, must be kept insect-proof and moisture-free to prevent premature germination. Again, FLAV-O-TAINER fills the bill.

Aside from its already widespread use as an attractive, low cost food container Royal's FLAV-O-TAINER is doing a superb packaging job in many diversified fields. It has distinct advantages that you will certainly want in new product packaging, or the re-packaging of your present line.

Call or write today for the complete FLAV-O-TAINER story.

THOMAS M Royal COMPANY

5800 N. SEVENTH STREET
PHILADELPHIA 20, PENNA.

SAN FRANCISCO · PITTSBURGH · NEW ORLEANS · BRYN MAWR · SYRACUSE · WASHINGTON, D.C. · ST. LOUIS · SEATTLE · NEW YORK · BEAUMONT · ATLANTA · DAYTON · DETROIT · DENVER · BOSTON · CHICAGO

ON A SILVER PLATTER

Your product, in your container, physically packaged and labeled, comes back to you virtually "on a silver platter"—there in a few words is the story of the Stevens-Wiley custom packaging service. Complete, comprehensive, versatile . . . Stevens-Wiley service embraces any phase or every phase of dry packaging. Geared to the biggest jobs, our modern equipment can handle the little ones economically, too. Regardless of what your packaging problem is, why not let the Stevens-Wiley engineers plan an efficient production schedule that will dove-tail with your own equipment and facilities.

WRITE OR CALL FOR ADDITIONAL INFORMATION WITHOUT OBLIGATION

THE STEVENS-WILEY
MANUFACTURING CO., INC.
HANCOCK & W. BERKS STS.
PHILADELPHIA 22, PA. REGent 1616

continuous and appreciable shift in permeability value. Such a shift seems to be characteristic of the material and has been observed on certain plastic films, compound structures, etc. However, such shift is not normal in most materials and in nearly every case the magnitude of the change is such that it does not, in general, affect the usefulness of the result. Most materials arrive at a true and constant transmission rate in the normal cycle.

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C. TAPPI, issued June 1, 1946, Tentative.
D. Government Specifications:
JAN-P-131, October 31, 1944; Joint Army-Navy Specification; Packaging and Packing for Overseas Shipment, Barrier-Material; Moisture-Vaporproof, Flexible; Army Number 100–35; Navy Number 39P 16b, Section XXXI.
AN-B-20, Amendment-1, October 2, 1945; Army-Navy Aeronautical Specification Barrier; Flexible Sheet Moisture Vapor.
AXS-1322, June 29, 1944; Ordnance Department, U. S. Army, Tentative Specification; Barriers, Moisture-Vaporproof.

Produce pre-packaging

(*Continued from page 134*) *soup mixes, cole slaw, etc.* The preparation and pre-packaging procedures for these products have been described before. All of these products are highly perishable. Because of this fact, no attempt has been made to process these items during the warm season of the year.

Summary and conclusions

1. Judging from the limited experience to date, there seems to be little doubt that pre-packaged fruits and vegetables have been popular with consumers, and especially in self-service super-markets. In some self-service super-markets, reported increases in sales of pre-packaged fresh vegetables and fruits versus those sold in the usual manner have been spectacular. However, other store operators report large increases in sales without any pre-packaging. It is impossible at this time to determine how much of this popularity is due to novelty, how much to appreciation of kitchen-ready produce, and how much to the current relatively high level of wages and employment and the extreme scarcity of other products for which consumers might spend their earnings if they could, such as automobiles, refrigerators, radios, clothing, houses, and the like.

2. Pre-packaging of fruits and vegetables seems to be ideally adapted to use in self-service retail stores, whether of the super-market or other type. Sales of pre-packaged vegetables have by no means been limited to self-service stores, however. Pre-packaging of vegetables thus merely follows a trend established many years ago for non-perishable food, such as groceries and canned goods.

3. It seems logical to expect that pre-packaging of fruits and vegetables will stimulate sales of fresh fruits and vegetables, if properly *refrigerated* and handled, because it should enable a housewife to purchase perishables at any hour of the day with confidence in the fact that she is not merely taking the leftovers of those

Purchasing Agent

"Aiming" for a better steel container

CONTINENTAL makes steel containers in a wide range of sizes and types, for virtually every field of industry. If your product is liquid, solid or semi-solid, there's a Continental steel container to package it. When specifying, remember that the Triple-C identifies the *right* container, backed by complete service facilities.

Right now our production is limited, but we look forward to taking care of your requirements as soon as sufficient materials are available.

A COMPLETE LINE OF STEEL SHIPPING CONTAINERS

The Triple-C means best in quality, service

CONTINENTAL CAN COMPANY

100 East 42nd Street, New York 17, N. Y.

26 YEARS
OF KNOW HOW

Specializing in PRECISION
COMPRESSION, TRANSFER
and INJECTION MOLDING
also High Pressure Die Casting
of Zinc and Aluminum

PLASTIC & DIE CAST PRODUCTS CORP.
1010 EAST 62nd STREET • LOS ANGELES 1, CALIF.
Roy L. Peat, President Established 1920

who got there soon after the daily delivery of fresh fruits and vegetables was made.[2]

4. Whether or not pre-packaged fruits and vegetables can be successfully retailed at the same cost as un-pre-packaged produce is still a question on which there is much disagreement. Most experiments have been conducted for too short a time to answer this question, even if accurate and complete records and costs were being kept. In some experiments as now conducted, no comparison is possible. It will probably take a number of years of trial and error and careful study to determine the degree to which each vegetable and each fruit can successfully be pre-packaged.

5. Where pre-packaging should be done will probably be the subject for argument for many years. The correct answer will be determined primarily by the product itself, its seasonality, and the degree to which it happens to be produced in large quantities in a particular area. Experience has shown that potatoes, onions and oranges can readily be pre-packaged at country shipping point, but no other products marketed in New York or the New England States have demonstrated on a large scale that the shipping point is the place to do the job. Most of the meager experience to date indicates that the more perishable the product, the closer to the consumer the pre-packaging has to be done.

6. With but one exception, commercial packers do not continue their operations through the "warm" summer months, which is precisely the season of the year that New York State and other Northeastern growers would have available the highly perishable products which they would like to see pre-packaged. Some of the reasons cited by processors to explain why they do not handle local spinach and other perishable produce during the warm months were (a) the difficulty of obtaining uniformly graded produce from nearby growers, (b) the difficulty of obtaining uniform weights per package, and (c) the difficulty of moving and selling pre-packaged produce during hot weather, in the absence of adequate refrigeration at every step from farm to consumer. Several of the processors said local produce was too "hot" for pre-packaging when it arrived at the pre-packaging plant, and they could not afford to hold it long enough to cool it down to the optimum temperatures before packing it. Some processors did not believe that local varieties were right for pre-packaging, some lacking firmness or the ability to stand the rough handling in the spraying and washing tunnels. It is entirely possible that these alleged defects could be overcome by more careful grading and guaranteeing minimum weights per container. Rapid and efficient cooling of produce as it came from the field might result in the delivery of a much better product at the pre-packaging plant. Experimentation at the laboratory level and pre-packaging plant, as well as in the retail store, should probably be undertaken to determine to what extent these obstacles can

[2] It should be recognized that the high quality of pre-packaged produce has been due to careful handling and above all to the use of refrigeration in the retail store. The pre-packaging itself does not necessarily improve the appearance or the food value of the product.

Pre-eminence for your products!

greater attraction

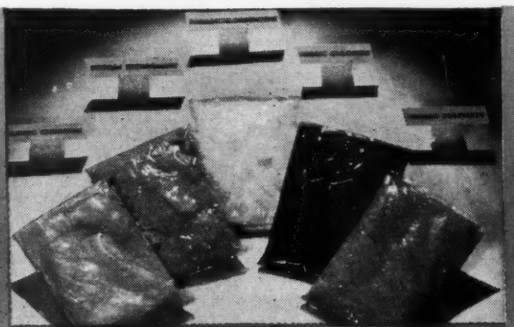
better protection

Put glamour on your counter! And protection, too! You can do this double favor for your products with Dow Plastics. Styron, Saran Film and Ethocel Sheeting smooth the way to sales. . . . Styron is sparkle in a package. It compliments even the finest products. It gets along with most chemicals, too, so you can specify it in pharmaceutical containers. . . . Beauty blends with protection in Ethocel Sheeting. It's clear and bright and rugged—a fine companion for fragile things like flowers. It stays strong and lively, won't turn yellow. . . . .Tough, transparent Saran Film "keeps moisture in its place", keeps out dust and dirt, keeps metals free from rust. And it accommodates chemicals with ease. . . . Choose Dow Plastics for "package-power"—power to protect, power to sell! Choose Dow Plastics and build pre-eminence for your products!

ETHOCEL SHEETING

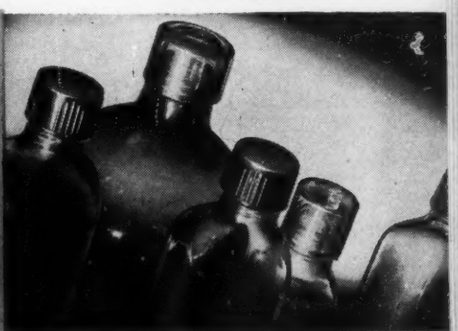
Beauty and protection join for many uses in semi-rigid Ethocel Sheeting.

SARAN FILM



Saran Film keeps chemicals and other products free from moisture, dirt.

STYRON



Styron is extremely practical, too, in closures for pharmaceutical bottles.

New! **SARAN F-120 RESIN** For dense coatings that are completely waterproof, colorless, odorless and tasteless and highly resistant to moisture vapor, solvents, oils, greases, fats, acids, alkalies and corrosion.

SARAN F-122 LATEX For a quick-drying, high-gloss, abrasion-resistant film with excellent mechanical properties for flexible barriers that withstand folding and scoring. Suitable for protective food papers.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago
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DOW

PLASTICS

FOR BETTER PACKAGING:
STYRON • ETHOCEL SHEETING • SARAN FILM
SARAN F-122 LATEX • SARAN F-120 RESIN

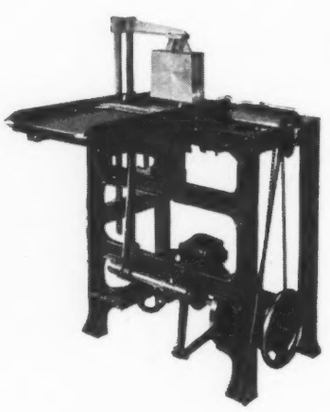
PEAK PRODUCTION AT A PROFIT

Day after day many carton packaging departments are showing savings in hand labor, added production and increased profit with PETERS economical packaging machines.

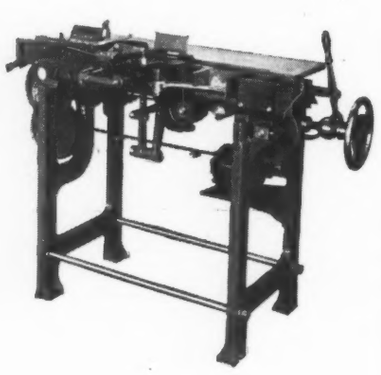
If you are trying to find new methods of increasing output and reducing your labor costs, why not look into the advantages offered by these Peters automatic and semi-automatic carton set-up and closing units?

Send us samples of the various cartons you are now using. We will gladly make recommendations for your consideration.

This PETERS JUNIOR CARTON FORMING & LINING MACHINE sets up 35–40 cartons per minute, requiring only one operator. After the cartons are set up, they drop onto a conveyor where they are carried to be filled. If you desire to handle several carton sizes, the machine can be made adjustable.



This PETERS JUNIOR CARTON FOLDING & CLOSING MACHINE closes 35–40 cartons per minute, re-requiring no operator. After cartons are filled, they enter machine on conveyor and are automatically closed. Can also be made adjustable to handle several different size cartons.



PETERS MACHINERY COMPANY
GENERAL OFFICE AND FACTORY
4700 RAVENSWOOD AVENUE, CHICAGO, ILL.

be overcome in a satisfactorily economical manner.

7. Whether individual growers, cooperative groups of growers or private agencies undertake the pre-packaging function, it seems fairly obvious that operations must be conducted practically throughout the year if reasonable efficiency and low costs are to be attained. This would indicate that New York State growers or groups of growers would have to go into the business of buying carloads of vegetables and fruits from all parts of the United States, in order to have facilities available when their own local produce was to be pre-packaged. Any grower or group of growers contemplating pre-packaging operations of perishable produce would probably have to invest from $50,000 to $150,000 in plant and equipment, which would enable them to compete with present pre-packaging concerns. Such a group of growers would also have to be prepared to learn the technique of the business.

8. Many of the pre-packaging operations tend to make the product *more* and not less perishable. Washed spinach which has had the roots cut off and has been tumbled through a long washer and sprayer is more perishable, because of probable bruising, than unwashed spinach. Products which have been chopped, either by machine or hand, such as tossed salads, cole slaw, and the like, are much more perishable and more likely to turn brown than the original unwashed and uncut ingredients. Consequently, greater care must be taken of the pre-packaged product than of the unpre-packaged product.

9. Retail store refrigeration of some sort, which will maintain the pre-packed produce at low, but not freezing, temperature, with proper humidity, seems to be almost a necessity if sales of a large part of the pre-packaged produce are to increase substantially. Incidentally, the same conclusion applies with even greater force to the retail merchandising in bulk of fresh vegetables and fruits. It is only fair to state that there is some difference of opinion on the subject of refrigeration. Some very successful produce merchandisers question the need for costly and elaborate refrigerator show-cases for produce, and place their faith in rapid turnover of produce, supplied fresh each day.

10. Practically all individuals with experience in pre-packaging agreed that the right kind of a package had not yet been developed; that the films used for wrapping or bagging the products did not fully meet requirements; that refrigeration cases (of the proper type) were hard to obtain and relatively expensive, and that wrapping machines for pre-packaging fresh vegetables and fruits were not only hard to obtain but should still be regarded as in the evolutionary stage.

ACKNOWLEDGMENTS: *The authors naturally assume sole responsibility for the findings included in this report. They wish, however, to acknowledge the unusually active interest displayed in the pre-packing problem by Dr. C. E. F. Guterman, Dr. H. C. Thompson, Dr. F. F. Hill and Dr. A. J. Heinicke, and to express appreciation of their advice and assistance in the carrying out of this survey. The authors wish also to express their deep appreciation of the cordial reception and whole-hearted cooperation accorded them by the commercial pre-packing firms, the wholesalers and the chain store operators who made this preliminary survey possible.*

The odd case of the 6-sided coffee cans

IN SPITE of the barnacles, it was a can of coffee, sure enough.

The married couple from Warren, Ohio, who found it on the beach at Fort Lauderdale, Florida, could plainly read the label. They had found it just above the high-tide mark. That, plus the encrusted barnacles, told them it had been washed up from the sea.

ENEMY ACTION

This happened on June 4th, 1942—the height of the close-in submarine warfare off the Atlantic Coast.

Before June was over, a total of twenty cans of a well-known brand of coffee had been found in the vicinity—all intact, all covered with barnacles, and—this is a curious part—all six-sided, instead of round, in shape.

It was never known on what ship this coffee was sunk, but the can code numbers showed it had been packed about a year before in Houston, Texas; and pressure tests at American Can Company's laboratories proved the cans had been about 1500 feet under water.

The pressure tests also revealed that such cans under such pressure usually become 6 or 7 sided.

DRANK IT

Both the people, who found the coffee in Florida, and American Can scientists opened the vacuum cans and made coffee with the contents.

The coffee was fresh. The cans had "held." No air or water had harmed the cans' contents because of the cans' protection and vacuum pack!

MORAL

The extraordinary punishment these vacuum cans received is something that happens once in a business lifetime. The moral, however, is plain: *No other container protects like the can*—in this case, a *Canco* can.

For only Canco has the facilities for research and product development which made the coffee can and many other types of containers possible, practical, and commercial.

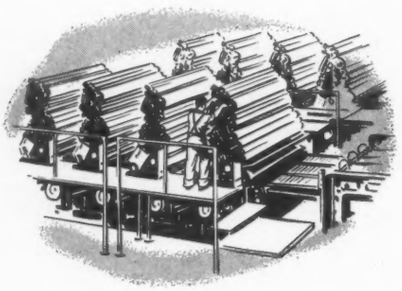
A Canco representative will gladly explain to you the benefits of doing business with the leader in metal packages.

American Can Company CANCO New York · Chicago · San Francisco

FOR COFFEE—NO OTHER CONTAINER PROTECTS LIKE THE CAN

OUR GIANT 4-COLOR PRESSES ARE BUSY PRODUCING

America's Finest Packaging!



AT our plants in Rochester and San Francisco, we have the largest batteries of 4-color offset presses in the country. These mechanical marvels combine speed with precision, turning out FULL Color packaging material that sparkles with naturalism and sales appeal.

Many of America's largest companies are listed among Stecher-Traung customers. When you need FULL Color labels, box wraps and cartons to promote the sale of your products, come to the leader—Stecher-Traung!

★

Labels • Box Wraps • Seed Packets
Folding Boxes • Merchandise Envelopes and Cards • Advertising Material

STECHER-TRAUNG
LITHOGRAPH CORPORATION
Rochester 7, N. Y. • San Francisco 11, Calif.
Offices in Principal Cities

From cracker barrel . . .

(*Continued from page 115*) first attempts at brand promotion, but consumers liked it and preferred the cleanliness and the convenience of the package.

At first these packages, now turned out by the millions on completely automatic production lines, had to be glued, filled, weighed and labeled by hand. The only machine operation was the cutting of the blank. The first machine which weighed portions and filled about 20 packages of Quaker Oats per minute appeared about 1895, according to "A History of the Quaker Oats Co." At the turn of the century the Quaker Oats Co. was buying many weighing machines from the Automatic Weighing Machine Co., one of the ancestors of the present Automatic Scale Co., probably filling at speeds of about 30 per minute.

An interesting comment comes from William J. Beck of the present Automatic Scale Co. who mentions an Automatic Weighing and Package Filling Machine Co. which was quoting weighing machinery in 1886.

"The outfit was operated," says Mr. Beck, "if memory serves us right, by two brothers Weyant, one of whom was a locomotive fireman and the other a Methodist clergyman."

J. L. Ferguson, founder of the machine company which now bears his name, was once an employee of the Quaker Oats Co. He developed a sealing machine in 1911 which sealed both ends of the packages in one operation. The Quaker Oats Co. did not adopt its now familiar round package until 1915.

Cereals, because of their light weight and the ease with which they could be mass produced, had a significant influence on the development of national distribution of packaged foods. Some of the cereal manufacturers were also among the first to adopt a printed carton as distinguished from unprinted cartons covered with a printed wrapper still used for Uneeda Biscuits.

Another development attributed to the cereal package is the tight wrapping machine, the first semi-automatic machine introduced by Stokes & Smith in 1917.

Basic materials for packaging come from all parts of the world and form an essential part of international trade. The mouthwash, for example, that you get at the corner drug store is in a bottle. The sand for glass may have come from Ohio; latex for the coating on the closure liner from Malaya; lacquer for the closure enamel from India; chalk for the clay-coated board used to make the carton that protects the bottle, from the White Cliffs of Dover.

Indefinitely one could cite examples to trace the improvement in ways of making packages, filling and sealing them. More volumes could be written on the development of printing methods relating to their use in packaging from the time William Bradford brought the first printing press to America and Bass Otis introduced lithography in the United States in 1819. Volumes could be written on the scientific research and technological development of protective packaging mate-

There is nothing
quite so fine

STRADIVARIUS

ALUMINUM FOIL

Today's packaging requirements and your production opportunities suggest new refinements in the foil used. Basic, revolutionary improvements in machines and processes have created a quality of foil with unusual advantages to users.

COCHRAN FOIL COMPANY, INC., LOUISVILLE 10, KENTUCKY

SPEED UP WRAPPING, BANDING OR BUNDLING OPERATIONS WITH

HERE'S the answer to those messy, troublesome, *costly* operations performed in hand wrap work. The new Corley-Miller Sheeter-Gluer 1. Cuts sheets to exact size from low cost rolls: 2. Glues them where required; 3. Delivers the sheets in fast, measured tempo, to one or more operators. It performs with equal efficiency with Cellophane, Kraft or other papers, either plain or printed. The new Model BL is precision built to high standards of quality. It will give economical service for years. This equipment is widely used for packaging, paper goods, textiles, bottles, and odd shaped products. The electric eye can be used for "spot" printed rolls.

Send for complete information today!

Diagonal wrapping a textile product in a Cellophane sheet pre-glued at three corners by Model BL.

Banding stationery with band pre-glued and cut by Model BL.

MACHINES FOR: ***Wrapping, Sealing, Bag Making, Bag & Carton Filling, Bag Crimping or Closing, Gluing and Sheeting, Sandwich Making.***

Miller *Wrapping & Sealing Machine Co*

Manufacturers of CORLEY-MILLER Packaging Machines
14 SOUTH CLINTON STREET, CHICAGO 6, ILLINOIS

rials—on design to give greater eye appeal—to make packages more convenient.

And behind every line that was written would be the picture of a changing America where the science of packaging has become the inseparable aid to mass production that brings better living to America's millions.

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Montgomery Ward

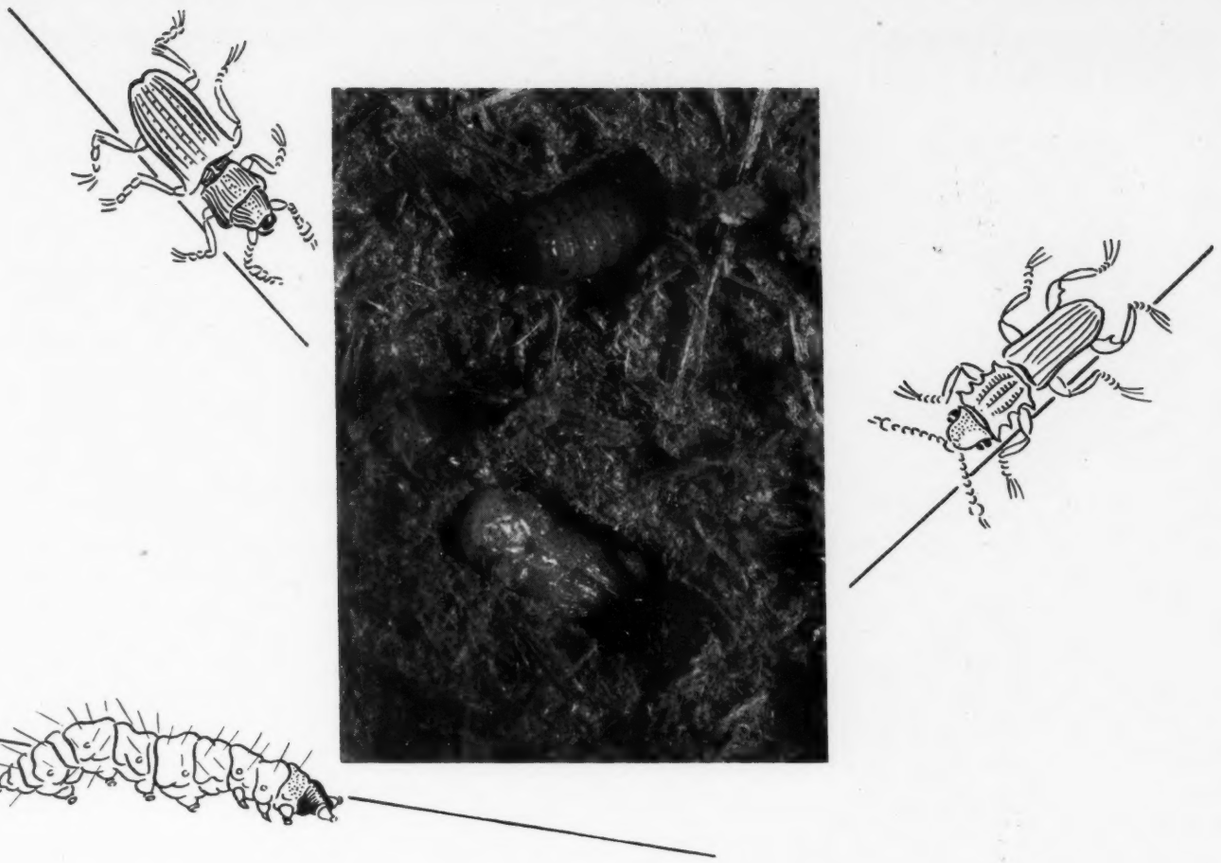
(*Continued from page 98*) care of the product. Fact tags, mentioned earlier in this article, are used on non-packaged items. A line of electric ranges, for example, may include individual Fact Tags for each model, as well as an instruction book and repair parts list.

Owner's guides are prepared for all types of merchandise on which the customer may require a source of future reference regarding its installation, operation and maintenance. Some of these instruction booklets also include information on servicing the equipment. A companion piece of literature lists repair parts. All this material makes liberal use of illustrations to promote better understanding of the instructions.

Owner's guides

In the preparation of owner's guides and other printed matter, the Ward merchandise literature department works closely with company "sources"—the numerous firms from which merchandise is bought. The authenticity and completeness of all merchandise information are further guaranteed by the cooperation of the company's general service department, which assists in the handling of technical information, and the Ward Bureau of Standards, which conducts tests on new merchandise. Before instructions are printed, they must win the approval of the general service department, Bureau of Standards, legal department, editorial department, the buyer and the merchandise source.

Ward's believe that complete, accurate literature about the product enhances the selling job and increases the customer's satisfaction with the merchandise. Because even a minor mistake in a parts list or instruction may produce a flood of costly correspondence with unhappy customers, extreme care is exercised to in-



No-o-o, sir!

It's not a pretty sight . . .

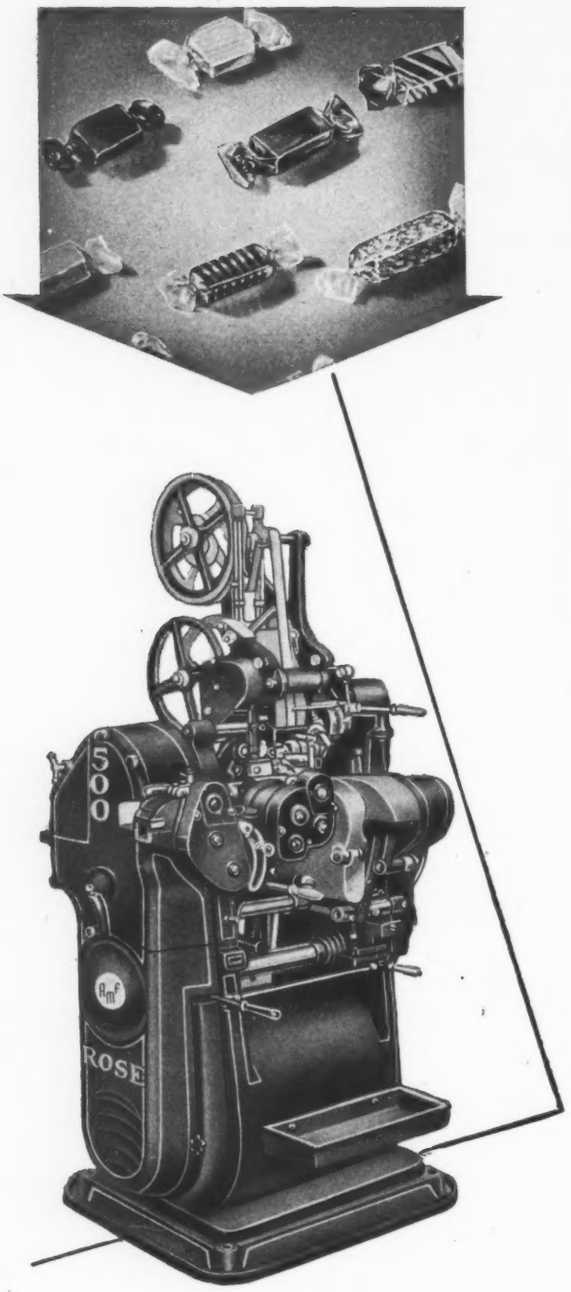
. . . and one you never want to see in your product! The most careful production techniques, however, cannot insure against the danger of infestation after your product has left your plant, unless you are certain that your packaging offers you real protection.

That's the job of Darex Thermoplastic Coating Materials. This simple and sure method of protection has been worked out into a technique that can easily be added to your packaging line, without the need for any changes in your standard package. It can be used on whatever portion of your production requires it. And it's *good*. It offers you protection in two ways—against moisture-vapor transmission, and against insect infestation. The smooth, hard, continuous film that keeps the moisture-vapor content in keeps insects out, and does both jobs inexpensively, surely. Isn't this worth investigating?

PACKAGING DIVISION DEWEY AND ALMY CHEMICAL COMPANY CAMBRIDGE 40, MASSACHUSETTS

DAREX THERMOPLASTIC COATING MATERIALS

INDIVIDUALLY PROTECTED CANDY



ROSE ALBION FLYER Type (R.A.F. 500) Toffee Cut and Twist. Wrapping Machine forms, cuts and twist wraps cylindrical, rectangular, or square pieces at speeds up to 500 per minute. The R.A.F. neatly twists both ends and INDIVIDUALLY PROTECTS your candy with colorful, attractive wraps. Increases impulse-buying sales and permits eye-catching, appetizing display. Hygienically protects each piece from dirt, moisture and handling.

USED BY THE COUNTRY'S LEADING CONFECTIONERS

Write the Rose Machinery Division for new circulars on this and other Rose Candy Machines

AMF **AMERICAN MACHINE & FOUNDRY CO.**

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sure against errors in all of the merchandise literature published.

There, in a nutshell, is Montgomery Ward's streamlined postwar packaging program—a plan which, based on intelligent evaluation of packaging's rightful role in the distribution pattern, is producing valuable results. The task of redesigning hundreds of packages and drawing up and distributing preparation standards and merchandise literature is hardly one to be taken lightly; but in view of Ward's methodical approach to the whole problem, successful completion of the job appears but a matter of time.

A man's toiletry . . .

(*Continued from page 99*) bowl have lids so designed with raised disk portion that makes for easy handling when opening. The powder box also has a screw lid to keep the powder safely in the container for traveling. When sold separately each container is gift packaged in a round box done in the gray and red box covering combination which Mark Cross has used for years for its gift packaging. On these boxes the crest is embossed in red on the lids with red edgings around the tops and bottoms of the boxes.

Square boxes in the same color scheme are used for soap, each cake molded with the Mark Cross trademark, individually cellophane wrapped and secured with a silver foil seal.

These seals are also used for securing outerwraps of white tissue paper, the final outer protection of each gift package.

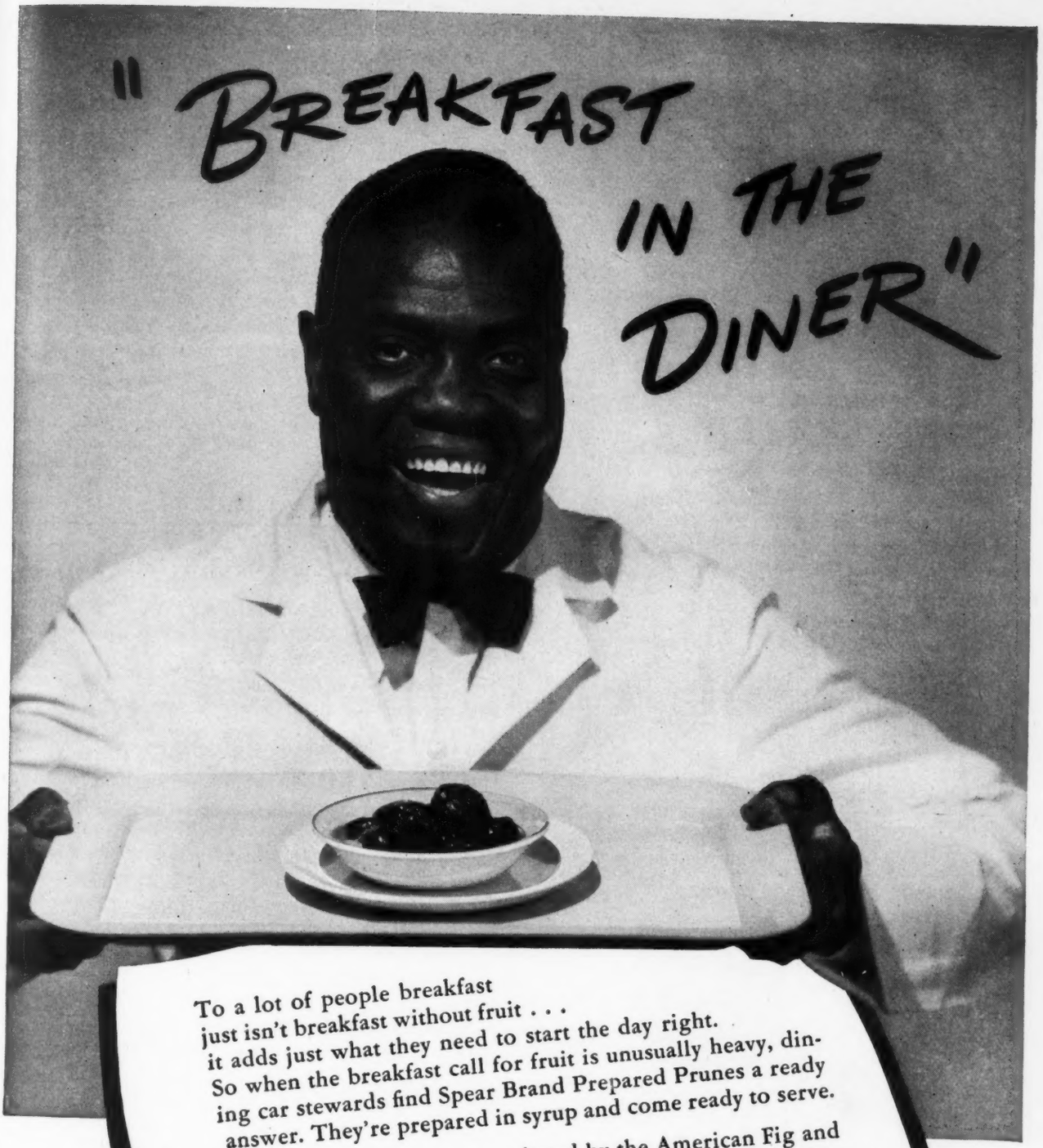
Another detail of the line is the chamois applicator, included with the powder box instead of a puff.

From France came a patent for a self-displaying case for counter use in showing the items in the line. This is so constructed that when the lid is opened the box automatically tilts into easel position.

CREDITS: *Glass containers Carr-Lowry Glass Co., Baltimore, Md. Plastic containers, molded by Norton Laboratories, Inc., Lockport, New York; Material, phenol formaldehyde, Durez Plastics & Chemicals, Inc., N. Tonawanda, N. Y.; Boxes, Warner Brothers Co., Bridgeport, Conn.; Silk screen labels, Creative Printmakers Group, New York. Embossed foil labels, Richard M. Krause, Inc., New York.*

Accent on Bayer

(*Continued from page 105*) cartons are of the same construction as the old ones, but the color scheme of the new ones—pale yellow background with brown and red printing—has replaced a dark brown used on the former display cartons. This lighter color scheme the company has selected to blend more harmoniously with new drug store fixtures, which are being made of lighter finished woods and other materials. The new cartons



To a lot of people breakfast just isn't breakfast without fruit . . . it adds just what they need to start the day right. So when the breakfast call for fruit is unusually heavy, dining car stewards find Spear Brand Prepared Prunes a ready answer. They're prepared in syrup and come ready to serve.

Spear Brand Prunes are marketed by the American Fig and Date Co. of New York, N. Y. and are packed in # 10 jars with efficient Crown Screw Caps. Only Crown Screw Caps have the patented Deep Hook Thread which grips under the glass thread. Greater sealing pressure is obtained with any given amount of application force. Crown Cork & Seal Co., Baltimore 3, Md. *World's Largest Makers of Metal Closures.*

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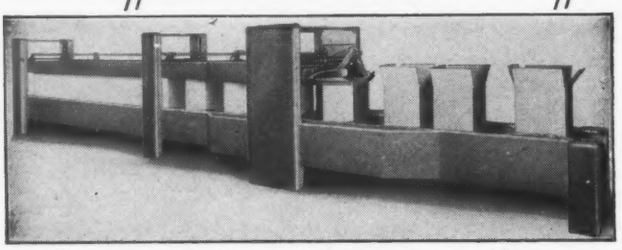

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display the word Bayer more strongly and are provided with quick-paced sales messages about the uses of aspirin.

Construction has been improved for the cartons holding the tins of 12s. Formerly when the flap was folded back for open counter position, it was merely inserted behind the packages in the back row. By means of a new slot in the back, the flap may be secured to the back panel and does not tend to slip forward out of position as the tins are sold.

The company plans no concentrated educational program to call attention to the revised packages, but is letting them speak for themselves on drug counters as part of its over-all advertising program to emphasize the name Bayer.

CREDIT: *Cartons, American Coating Mills, Elkhart, Ind. Labels, printed by The Nevins-Church Press, N. Y. Patented-opening tins, Continental Can Co., New York. Bottles, Owens-Illinois Glass Co., Toledo, Ohio. Lithographed closures, J. W. Clement Co., New York.*

Food packaging studies . . .

(*Continued from page 145*) *20% R.H.* A series of diced dehydrated beets was stored at 90 deg. F. and 20% R.H. In this instance eight sheets varying in water-vapor transmission rate from 0.35 to 222.00 were used in the preparation of the protective packages. It was found that in one series of these packages stored for 160 days and examined at regular intervals the beets did not require the protective action of any of the sheets and in no instance was the moisture content perceptibly increased. A second series, which was stored for 330 days, further indicated that even in long storage this low relative humidity did not necessitate the protective wrap. In fact, on longer storage there was a moisture loss from the packaged beets. This loss, incidentally, did not progress with any degree of relation to the comparative water-vapor transmission rates of the protective packages.

Protection at 85 deg. F., 65% R.H. Packaged dehydrated beets stored at 85 deg. F., 65% R.H. indicated that in this case the relative humidity of the surrounding atmosphere brought into more bold relief the comparative protective action of the various sheets. It was noted that sheets with higher water-vapor transmission rates failed to protect the samples of dehydrated beets from any appreciable increases in moisture content.

Protection at 55 deg. F., 55% R.H. When beets were stored at 55 deg. F., 55% R.H. for a period of 330 days with a series of protective wraps varying from 1.3 to 3.5, ample protection was noted even in instances in which the water-vapor rate was at the highest level, that is, 3.5. This percentage of relative humidity at this temperature did not appear to be sufficiently high to require a protective wrap of a low water-vapor transmission rate.

Protection at 70 deg. F., 50% R.H. In those instances

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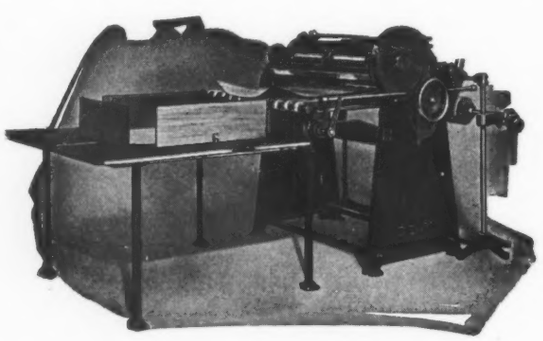


CHARLES BECK MACHINE CO.

13th & Callowhill Streets Philadelphia, Pa.

in which diced dehydrated beets were stored at 70 deg. F. and 50% R.H., the percentage of increase as compared between protective sheets of a water-vapor transmission rate of 0.35 to 222.0 was not of sufficient importance to warrant considering the water-vapor transmission rate as the important factor in protecting dehydrated vegetables.

Protection at 90 deg. F., 90% R.H. Under the extreme conditions of 90 deg. F., 90% R.H. (Figs. 1 and 2), it was found that striking differences, in so far as moisture increase is concerned, were apparent in the protective action of the various packages used. In both series in which beets were stored for 160 and 330 days, it was found that if the water-vapor rate of the original sheet used in the fabricated package was greater than 1.30, an insufficient protective action was afforded the packaged beets when stored at this high relative humidity. In certain instances with the more porous experimental sheets, the moisture content of the beets reached a high of 1,200%. In these cases molds developed and the beets were obviously inedible and the results, in so far as water-vapor content is concerned, were difficult to obtain.

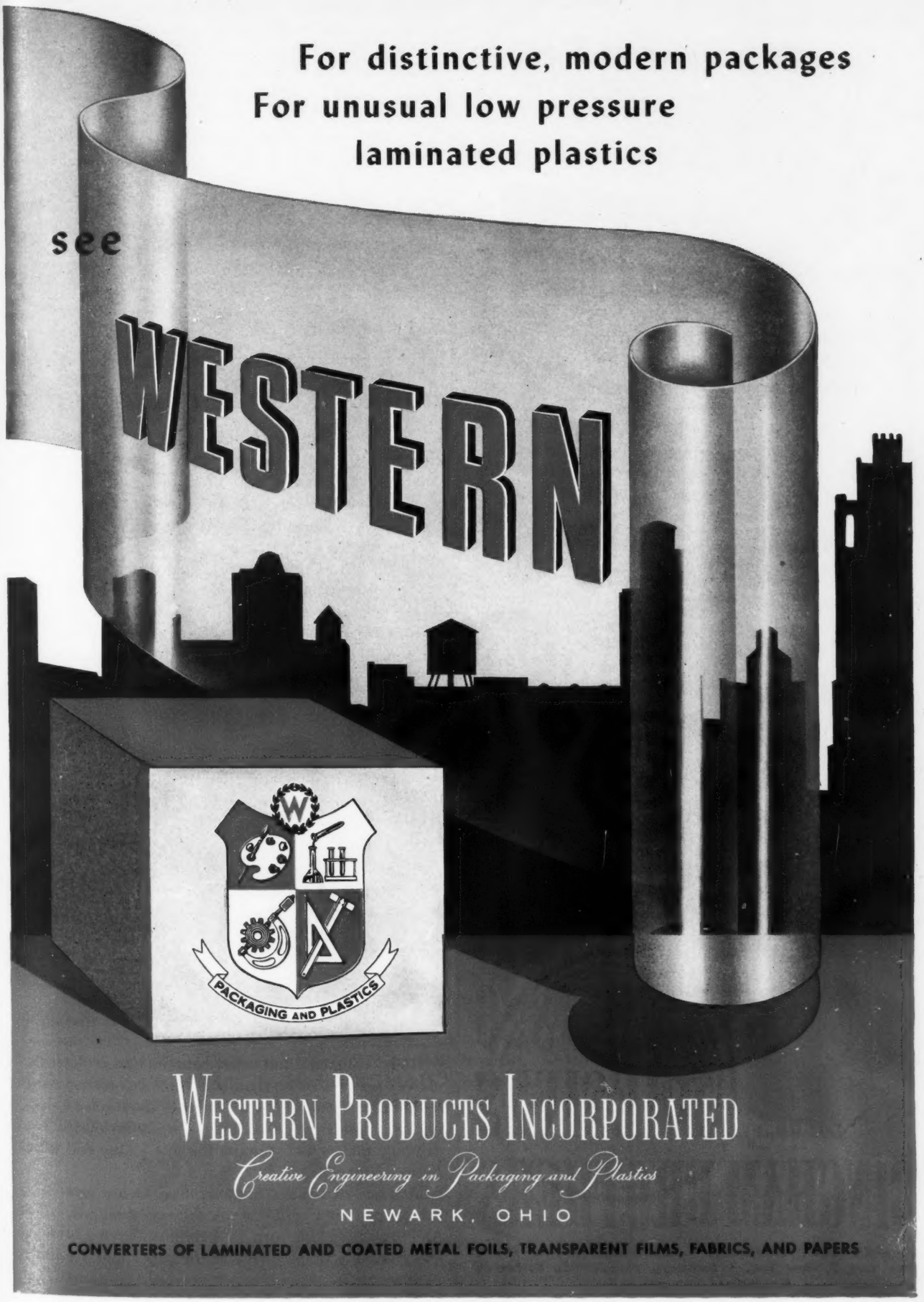
It should be noted also that under these extreme conditions of humidity and long storage the basic protective action of the original sheet, in so far as water-vapor rate is concerned, was materially affected. It is seen (Fig. 2) that the WVT sheet which originally had shown some protection for beets at this humidity up to approximately 200 days appeared entirely to lose this protective action by the end of 300 days. In the case of another wrap (Fig. 1), which had an original water-vapor transmission rate of 222.0, the protective action appeared to change inversely to that of the wrap with a water-vapor transmission rate of 2.20. In this case, in the first few days of storage the beets were given little protection, since the moisture content of the sample rose rapidly to approximately 800% of the original. The sheet then appeared to change in its porosity and the moisture content remained at a relatively constant level.

Tropical conditions. Packages were stored in a conditioning room in which the atmospheric conditions were adjusted to simulate storage in the tropics. The atmosphere of this conditioning room varied in 12-hour cycles from 90 deg. F., 75% R.H., to 111 deg. F., 72% R.H. It was noted that the protective action again was in more or less direct proportion to the average relative humidity of the conditioning room. In this case again, the packages with a water-vapor transmission rate greater than 1.3 afforded little protection for dehydrated beets.

Conclusions

a. Moisture gains in dehydrated beets when stored for six months at 55 deg. F. or above indicate a direct relationship between relative humidity and the water-vapor transmission rate of the protecting package.

b. At storage conditions of 70 deg. to 120 deg. F., 20% to 50% R.H., dehydrated beets do not require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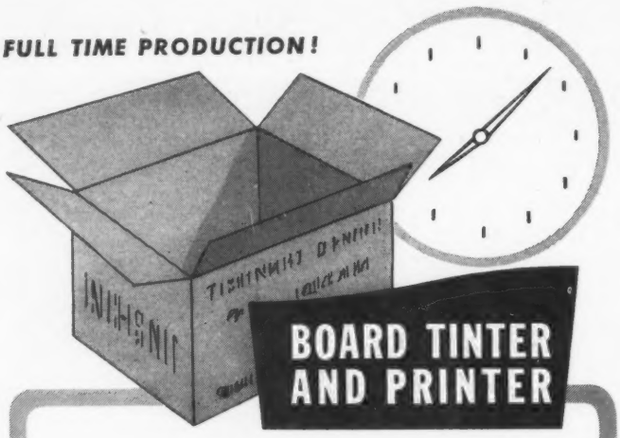

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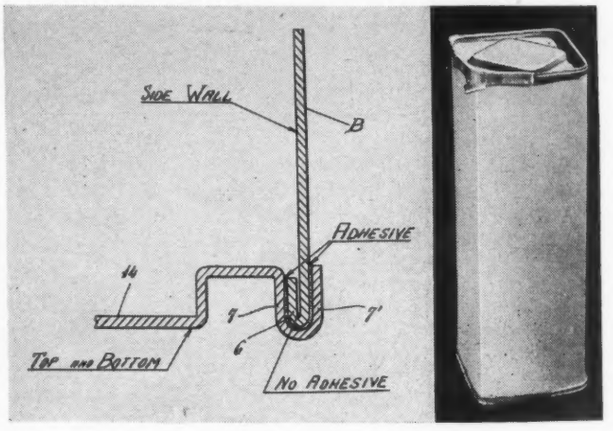
appreciable protection against water vapor over storage periods as long as six months. Above 50% R.H. (70–120 deg. F.) the water-vapor transmission rate of the protective wrap should be less than 0.50 if protection against water vapor is desired for six months or longer (Figs. 3 and 4).

c. If storage temperatures of 55 deg. F. or lower are anticipated, with 55% R.H., dehydrated beets may be stored for as long as a year in packages with water-vapor transmission rates as high as 3.5. At temperatures of 90 deg. to 120 deg. F., the relative humidity of the storage atmosphere is of more importance than the temperature in minimizing water-vapor absorption. Relative humidities as high as 50% may be allowed, however, even with protective wraps having high water-vapor transmission rates.

Improved milk container

Claims to an improvement in the fibre milk container to prevent leakage have been recognized in Patent No. 2,399,241, issued to Alfred Merkle, East Northport, N.Y. after six years of litigation. Mr. Merkle has assigned the patent to American Sealcone Corp., of New York City.

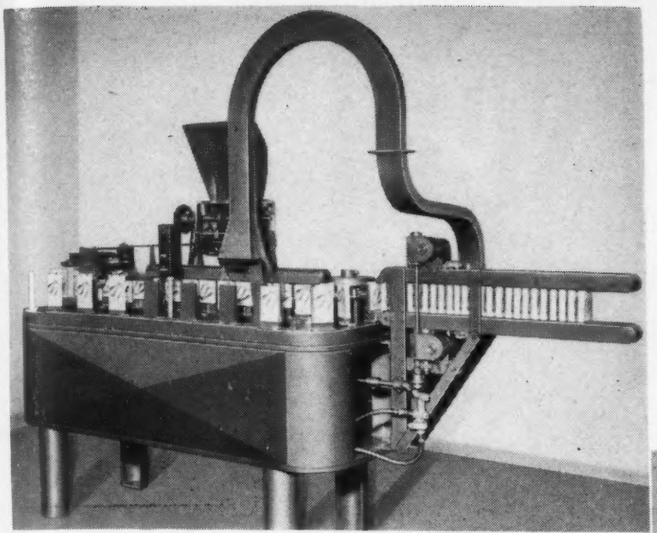
In the first patent application on August 3, 1940, several interferences were cited and three important claims relating to the flexible joint were disallowed. However, the pouring-opening feature was allowed. An appeal to the U. S. Court of Customs and Patent



Appeals resulted recently in a favorable verdict on all three claims.

It is claimed that the construction (illustrated above) permits more than a normal amount of rough handling and, utilizing one corner of the top for a pouring spout, adds the advantages of being inviolable, non-dripping and non-contaminating due to the end which protects the pouring lip.

Methods of marketing the container are now being determined and suitable machinery designed. The American Sealcone Corp. lays claim to having been the first company to manufacture the paper milk container 18 years ago.



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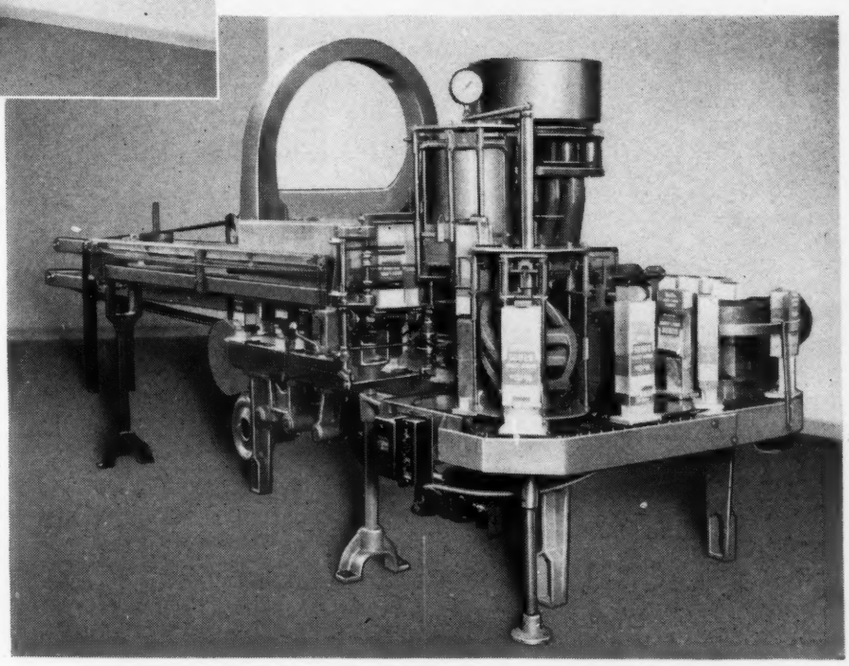
. . . these Packomatics Fill and Seal Both Carton Tops & Bottoms



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A GREAT PAIR—these two PACKOMATIC "Double Sealers," as the Trade refers to them. From miniature ounce-sample and individual-serving packages on the one machine, to commercial-sized packages on the other, these units are time-savers, labor-savers — *MONEY-SAVERS!* Whether ounce packages or commercial sized packages, these PACKOMATICS (1) *automatically* glue and seal carton bottoms; (2) *automatically* convey cartons under filler; then (3) *automatically* glue and close tops; and (4) *automatically* carry them in belt compression sealer to discharge point. Commercial package unit (as illustrated), is equipped with mechanism that automatically feeds flat cartons from magazine, opens, squares and places cartons on forms. No operator required. Carton-feeding unit is optional. Consult PACKOMATIC'S office nearest you (See Metropolitan Classified Telephone Directory) or write Joliet. Your inquiry incurs no *obligation!*

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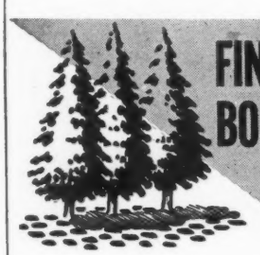

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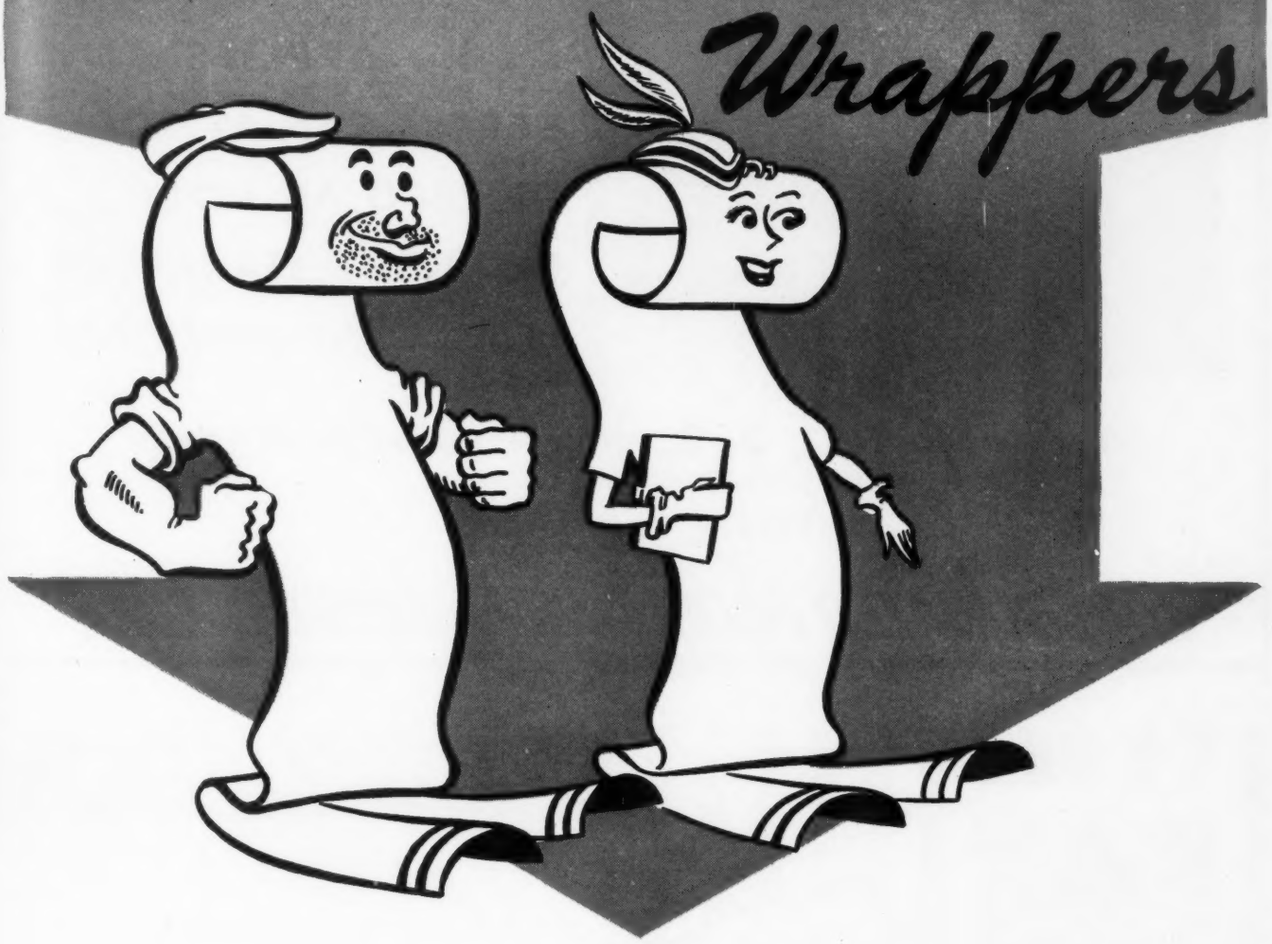

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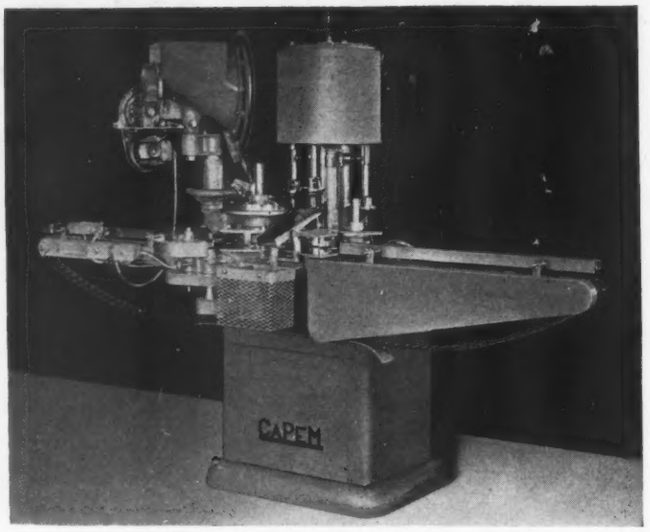

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HAYSSEN

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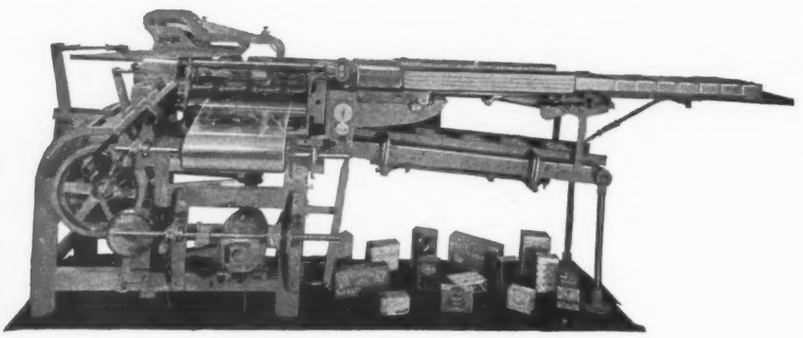
HAYSSEN

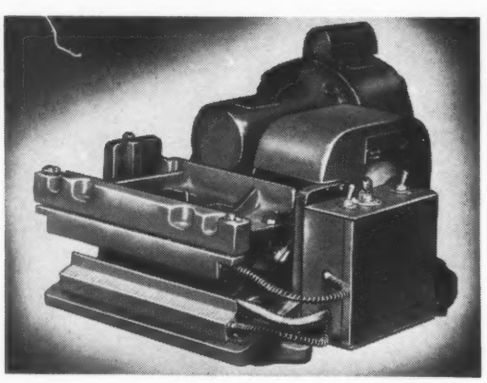


Overwraps, either printed or plain, can add much to package effectiveness. Besides protecting the contents, they can give your product the necessary eye appeal so essential to compete successfully in today's market. Does YOUR package impress the shopper favorably as she wanders from counter to counter in self-service stores? Good wrapping needs good equipment. Write the factory now for complete information on the "Hayssen," the machine that is meeting the needs of more and more food processors.

Hayssen Mfg. Company · Sheboygan, Wis.

HAYSSEN ELECTRONIC CONTROLLED WRAPPING MACHINES

Heat Sealer



Wrapade automatic and semi-automatic heat seal machine handles foils, cellophane and other heat-sealed materials. It applies correct amount of heat and pressure in proper time cycle to make secure and lasting seal. Can be operated with perfect efficiency by unskilled labor. Applies uniform pressure, resulting in sift-proof, tamper-proof, dust-proof and sanitary packages without glue or staples.
Saves its own cost in bag size, staples, glue, etc.
Call or write for immediate delivery.
Now in use by many leading packagers.

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Finishing—the final touches—can make or break your package. We specialize in every type of finishing operation — varnishing, lacquering, gumming, die-cutting, embossing, punching, straight cutting, paraffining — and offer our special process: LUSTRALITING.

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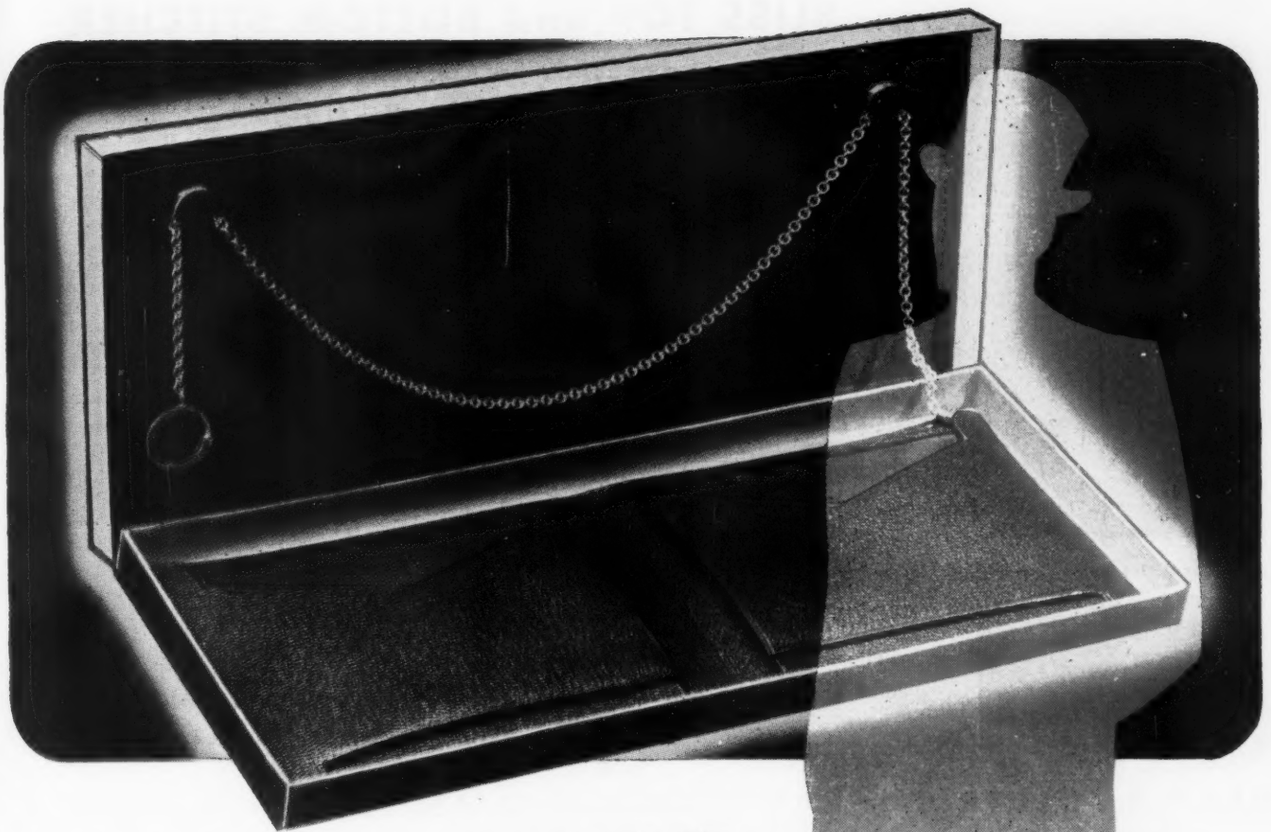
160 VARICK STREET, NEW YORK, N. Y.
WAlker 5-5473



DOES YOUR PRODUCT AFFECT YOUR POCKETBOOK?

THE two and a half thousand leather manufacturers in the United States are starting a trend toward some luxury items and better quality merchandise to suit a more exacting postwar clientele. They are expecting a ten per cent increase in business and they are going to put a lot more money into advertising and selling*. Over half of the box manufacturers in the country are making set-up boxes for leather manufacturers. They are designing them to increase sales of the high grade leather goods on today's market.

Leather goods manufacturers who now use over 100 million boxes a year depend on them for their better selling qualities, their product protection, and their downright economy. You get a lot of product protection, trade name identification and good display space with a set-up box at no extra cost. If you have to watch your pocketbook in buying your product's package, plan on a set-up box — it is better in many ways, and the box is a small part of your packaging cost.

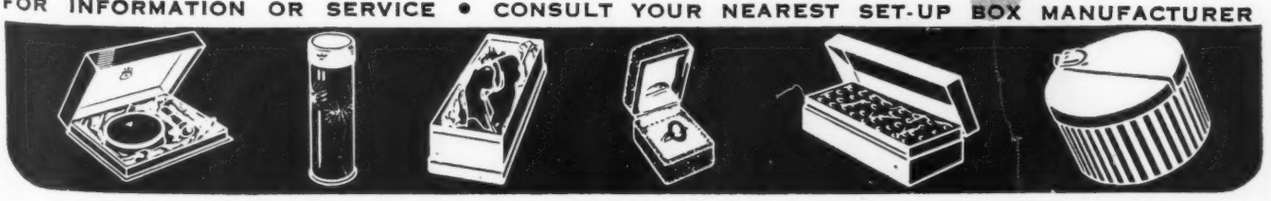
* For the latest postwar market research and sales survey of the leather industries, write or call your nearest set-up paper box manufacturer for survey No. (64) "Leather Industries", or "Leather Goods and Novelties Industry".

NATIONAL PAPER BOX MANUFACTURERS Association

AND COOPERATING SUPPLIERS

Liberty Trust Building • Philadelphia 7, Penn.

FOR INFORMATION OR SERVICE • CONSULT YOUR NEAREST SET-UP BOX MANUFACTURER



BLISS TOP *and* BOTTOM STITCHER

Corrugated or Solid Fibre Containers Are Stitched Both TOP and BOTTOM on This STITCHER

Set Up for Bottom Stitching

TOP and BOTTOM Stitched Containers are now specified for packing numerous products. On this Stitcher the bottoms of containers may first be wire stitched, then filled and the tops sealed with wire stitches.

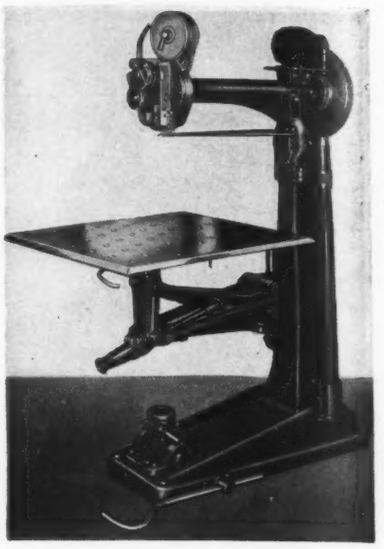
The illustration at the left shows the machine set up for bottom stitching of containers.

For top stitching of filled containers, the post is removed and table and blade anvil swung into position as illustrated at right. Less than one minute is required to make the change.

The counterbalanced table is quickly adjustable for varying heights of boxes.

Built in two sizes, with 15″ and 25″ throats and 26x30″ work table. Handles boxes up to 25″ in depth. Standard Bliss Heavy Duty Stitcher Head is used. Motor ¼ HP.

Wire Stitching both top and bottom provides a uniformly secure closure and gives added strength and rigidity to the case.



Set Up for Top Stitching

Write for further information.

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Chicago: 117 West Harrison Street Philadelphia: 387 Bourse Building Cincinnati: 1335 Paxton Street

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We use special inks for all types of materials.

We are equipped to handle any volume of work immediately.

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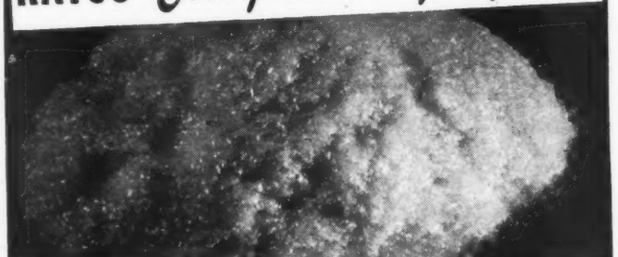

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Close-ups of a Superiority

Here are two close-ups showing how the Jones Constant Motion Cartoner feeds and opens cartons. All the subsequent carton loading and closing operations depend upon doing these first jobs *right*—failure means costly "stops" or "jams".

The flat cartons are stacked in the magazine. The bottom carton is bowed slightly by the suction cup to permit the separator blade to enter between it and the carton above. The carton is now separated positively from the other cartons, and held securely underneath the separator blade for positive pushing into opening position. No dependence on delicate gauging—no chance of missing a carton or feeding more than one.

In the opening position, a knife enters the carton along score line "A", affording a definite support over which the fingers open the carton—POSITIVELY. The knife then withdraws, leaving the carton in position to be picked up by constantly moving transport lugs. *No further handling of the carton is necessary.* All motions are actuated by eccentrics—no cams.

The clear-cut superiority of Jones feeding and opening typifies Jones simplicity and efficiency in handling every phase of cartoning. This superiority is one reason why so many of the biggest names among cartoning machine users select Jones equipment—and why a Jones cartoner will do a better job for *you*.

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P. O. Box 485 CINCINNATI, OHIO

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To make your package stand out from the rest in the competitive days ahead, let us design a transparent plastic container. Send for Samples and Prices

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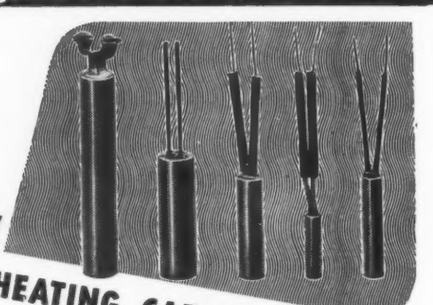

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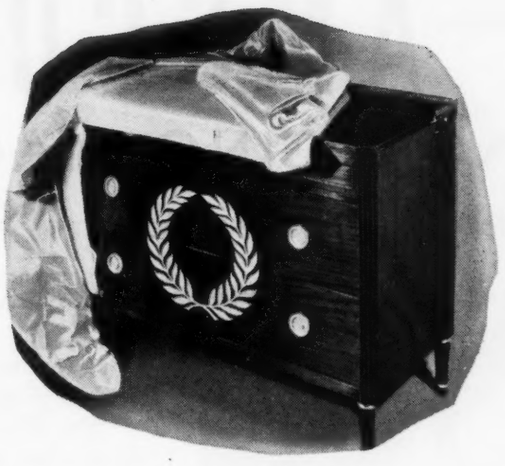
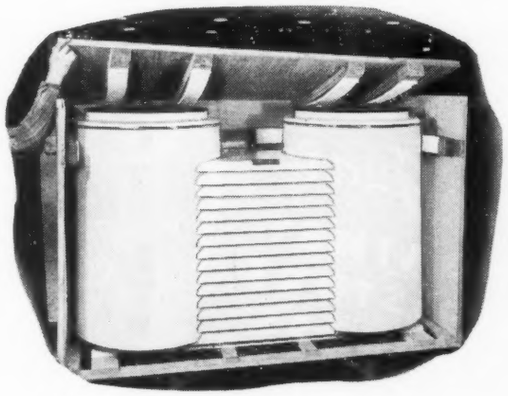
Kimpak* Float Packaging



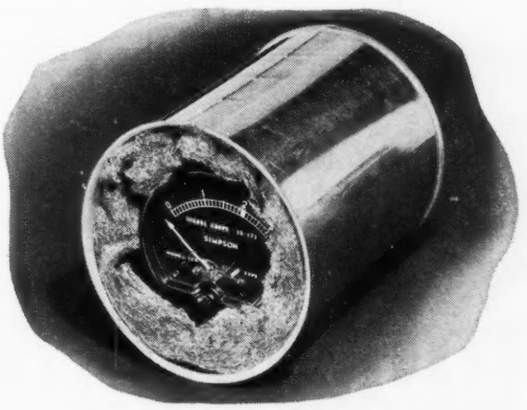
★ Protects Fine Finishes

Soft as doeskin and clean, KIMPAK Creped Wadding is gentle toward the most beautifully finished products. Yet KIMPAK is tough, too—will not deteriorate from shock or rubbing in shipment. For your product, KIMPAK is a form of packaging insurance.



★ Floats Your Product in Its Package

Highly sensitive products float safely on a "magic carpet" when they ride to market protected by KIMPAK. For a wrap of thick, resilient KIMPAK *suspends* them within the shipping package . . . cushions them against jolts . . . "washes out" damaging vibration.



★ Better for all Interior Packaging

Whether your product requires blocking and bracing, flotation, absorbent packaging, or surface protection, there's safety and saving in selecting KIMPAK. In the 4 basic methods of interior packaging, low-cost KIMPAK has a record of superlative performance.

An illustrated booklet on KIMPAK is now available. For your free copy, see your KIMPAK Distributor or write to Kimberly-Clark Corporation, Creped Wadding Division, Neenah, Wisconsin.

We are producing all the KIMPAK we possibly can, but due to the great demand, your distributor may have some difficulty in supplying you immediately.

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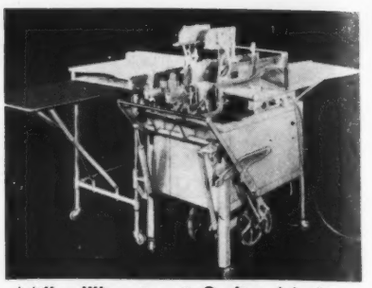
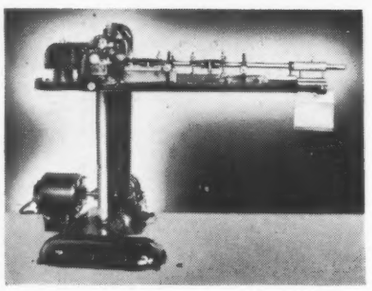
A PRODUCT OF Kimberly Clark RESEARCH

AMSCO *for your* PACKAGING MACHINERY *Requirements*



Miller Wrapping & Sealing Machine



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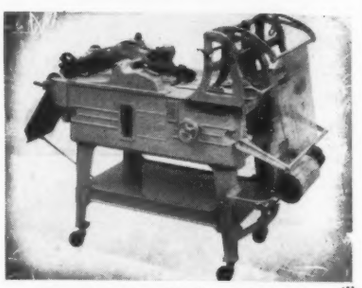

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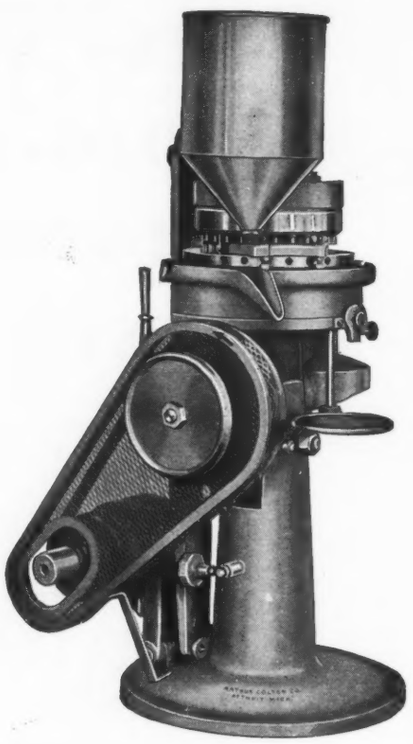

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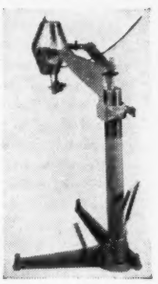
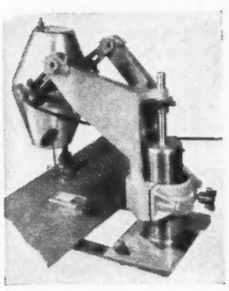


9-C—Portable pedestal model stands on the floor alongside machine or conveyor handling products to be marked. Markomatic switch immediately synchronizes marking operation with flow of products. Markomatic 9C is adjustable in three planes to mark a variety of packages. Unit is portable for marking operation in different locations. Stand 50″ high, occupies 16″ x 28″ floor space.



9-B—Different from floor model, this Markomatic mounts on the machine. Also adjustable to mark a variety of packages.

Both 9B and 9C have a handwheel to quickly raise or lower head into marking position. No tools required.

Have you a marking problem? Consult us — no obligation

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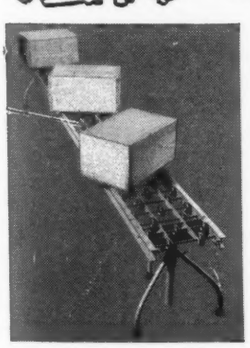

- Speedways — the all-purpose lightweight gravity conveyors — are cutting costs by moving cases, cartons, containers, boxes, packages cheaper, faster, and with less manpower!
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- Versatile Speedways are unlimited in use. Lightweight sections can be quickly and easily set up by one man wherever needed. No tools required for installation.

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FOR SALE: Bottles: Assorted sizes and styles, available in small quantities for immediate delivery. One dram screw cap perfume: ¼ oz. ground stopper, ½ oz. ground stopper, and 1 oz. ground stopper in several styles. Can furnish plastic boxes to fit any of the above. Finest crafted plastic at moderate prices. I Dram screw cap Gem Bottle with red or black 13 m/m cap, per Gross $3.75. White slide boxes for the above, per gross $3.75. Cotton Fillers for boxes available at small extra cost. Have available bottles from 1 dram to 16 oz. for immediate delivery. Write your requirements on your letterhead. Small charge made for all samples. Write H. L. Hill, Sec'y., P. O. Box 1174, Atlanta, Ga.

FOR SALE: Modern set up and folding box plant including complete die making and printing departments. Own building modern 42,000 sq. ft. including loading dock, sprinklers, all improvements. Excellent possibilities, $500,000. volume. Write Box No. 434 Modern Packaging.

Will purchase for cash, automatic Foil Bag Making Machine, with Electric Eye. Box 436 Modern Packaging.

WANTED: Rotary sheeter and stacker up to 35 inches in width. Must compensate and cut to printed register. MILMER CORPORATION, 263 East State Street, Milwaukee, Wisconsin.

We will purchase your surplus new or used cartons, barrels or fibre drums. Write or wire . . . Federal Container Company, 1006 Northwestern Bank Building, Minneapolis 2, Minnesota

Saving $ $ $ $
In Packaging Plants Everywhere

POTDEVIN
LABEL PASTERS

POTDEVIN MACHINE CO.
EST. 1893
1244 38TH ST. BROOKLYN 18, N. Y.
POTDEVIN

To Manufacturers of Packaging and Labelling Machinery, Office Equipment & Packaging Equipment of Every Description. Sole representation and distribution rights sought for Union of South Africa and North African Colonies by highly reputable old established South African Firm (head office Capetown—sales offices throughout Union and North African Colonies), with most powerful existing established connection of 25 years standing with all the leading largest manufacturers and commercial houses in above territories. Personal contact can be made with Principal of above firm in New York during July 1946—write for appointment to "Max," c/o J. A. Ewing & McDonald Co., Greeley Square Building, 101 West 31st St., New York City, N. Y. Examples of Agencies Desired: Packaging Machinery; Labelling Machinery; Sealing Machinery; Cellowrapping Machinery; Carton closing Machinery; Typewriters; Calculating Machines; Filing cabinets; Safes and all sundry office equipment. Glass Bottles, Transparent Plastic Containers of all shapes and sizes; Plastic Packages of every Description; Advertising Novelties; "Stock" labels, calenders and blotters; Adhesives; Transparent Scotch Tapes; Transparent Food Wrappings of all Descriptions; Aluminum foil; Christmas Cards; Playing Cards; Etc., Etc.

FOR SALE

107—New 250 gallon Horizontal Aluminum Storage Tanks, oval shape, 18" manhole, all welded construction, 64¼" long, ⅛" Aluminum Plate.

CONSOLIDATED PRODUCTS CO., INC.
16-20 Park Row New York 7, N. Y.

PACKAGING PLANT, extensive modern machinery, will custom pack your product for NW territory. Trackage, receiving, shipping, billing, 3 carload refrigerators. 24 inch assembly or sorting conveyor. Cello wrapping. Cello bagging. Labelling. Continuous monorail basket cooking in syrup. Vegetable wash and tray pack or bag. Confections cook and package in which we specialize. Complete premium deal servicing. Cayol Foods, 626—3rd Ave. No., Minneapolis, Minn.

GENERAL MANAGER WANTED

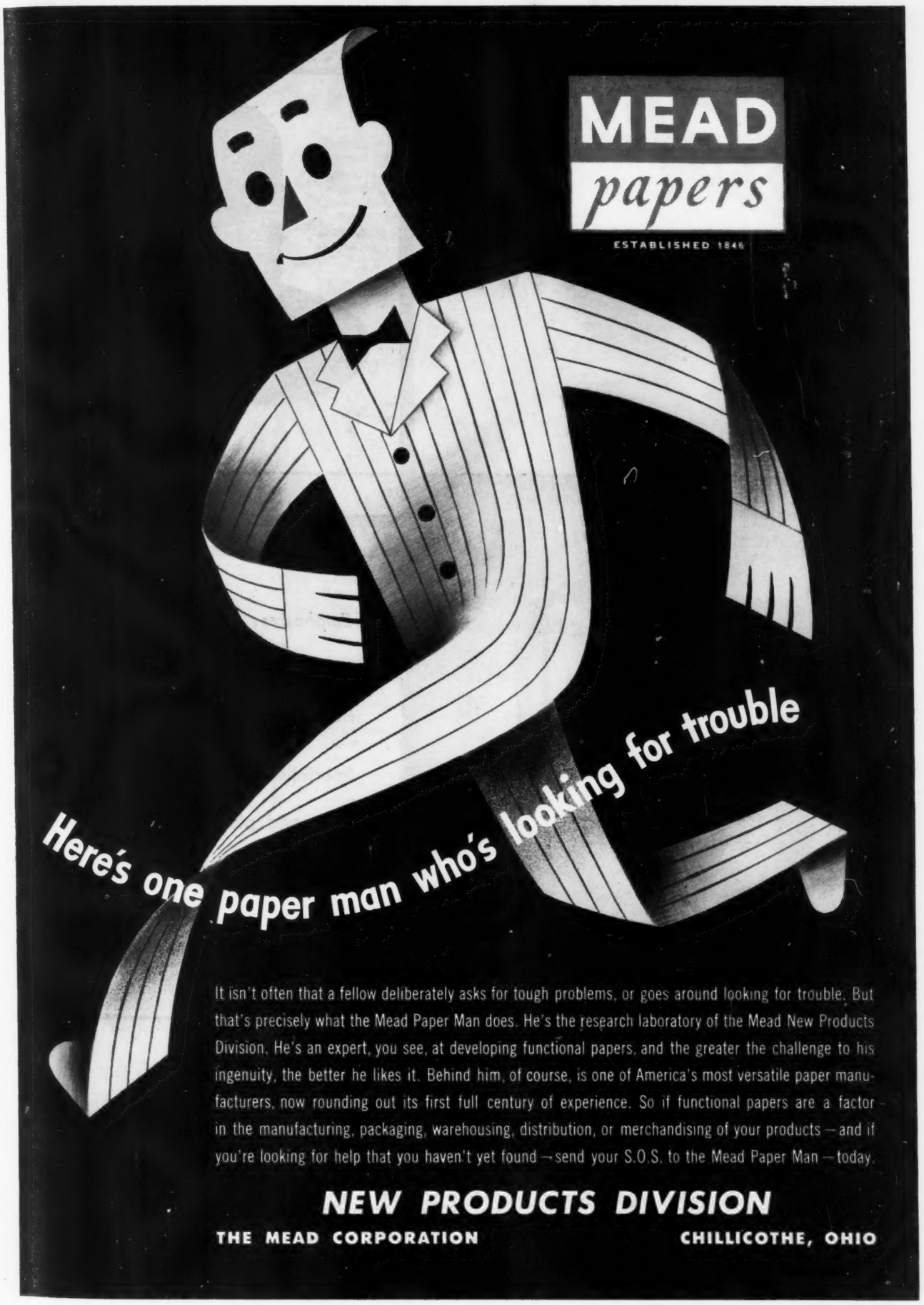
Increased duties of the President, resulting from the untimely death of our sales manager, require the services of an experienced executive capable of filling the position of general manager. Ample opportunity is offered for a man of vision and capability. Please address inquiries to

C. C. Vatter, President and General Manager
BRADLEY & GILBERT CO.
Manufacturers of Paper Boxes and Paper Products
Louisville 1, Kentucky
Established 1856

FOR SALE: 1 oz. Ground Stopper Bottles in White Suede Paper Boxes, encased in chipboard containers, 10 pieces to a carton. Price $12.00 per carton. Beautiful packages ready to fill and label—nothing else needed. Single sample or package $1.50 each. Also available 16 oz. American Style Tincture Ground Glass Stopper Bottles. Write H. L. Hill, Sec'y., P. O. Box 1174, Atlanta, Georgia.

Required Pocket shape envelope Meritor-type Smythe machine to make envelopes 2¼ x 3½ up to 4 x 6. Reply giving full particulars, price and where machine may be seen. Box 433 Modern Packaging.

SUPERINTENDENT—For high speed Staude and International gluing and cellophane window machine department, for folding box manufacturer in Baltimore, Maryland. Must be experienced. Salary $5,000.00 per year plus bonus arrangement. Box No. 435 Modern Packaging.

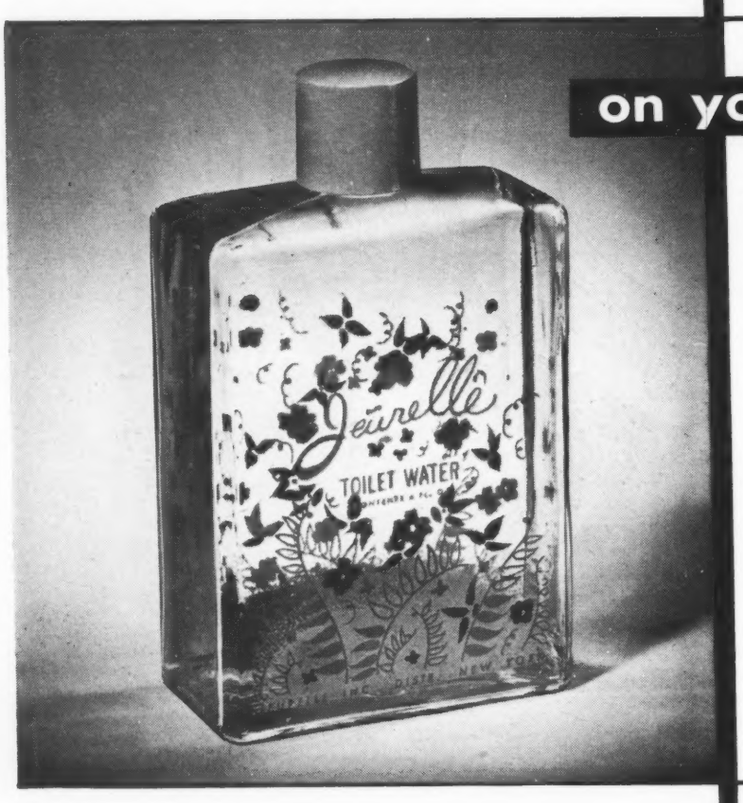


It isn't often that a fellow deliberately asks for tough problems, or goes around looking for trouble. But that's precisely what the Mead Paper Man does. He's the research laboratory of the Mead New Products Division. He's an expert, you see, at developing functional papers, and the greater the challenge to his ingenuity, the better he likes it. Behind him, of course, is one of America's most versatile paper manufacturers, now rounding out its first full century of experience. So if functional papers are a factor in the manufacturing, packaging, warehousing, distribution, or merchandising of your products—and if you're looking for help that you haven't yet found—send your S.O.S. to the Mead Paper Man—today.

NEW PRODUCTS DIVISION

THE MEAD CORPORATION **CHILLICOTHE, OHIO**

Creative DECORATION



on your package

Emphasizes transparency

Lends distinction

Helps sell the product

Specialists in printing and decorating glass and plastics packages. We are equipped to handle your decorating in any quantity.

Creative

PRINTMAKERS, INC.

200 VARICK STREET, NEW YORK 14, N. Y. • WALKER 5-6300

SURFACE DECORATORS FOR THE PACKAGING FIELD

IN CANADA: 2424 YONGE STREET, TORONTO, ONTARIO

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A BRESKIN PUBLICATION

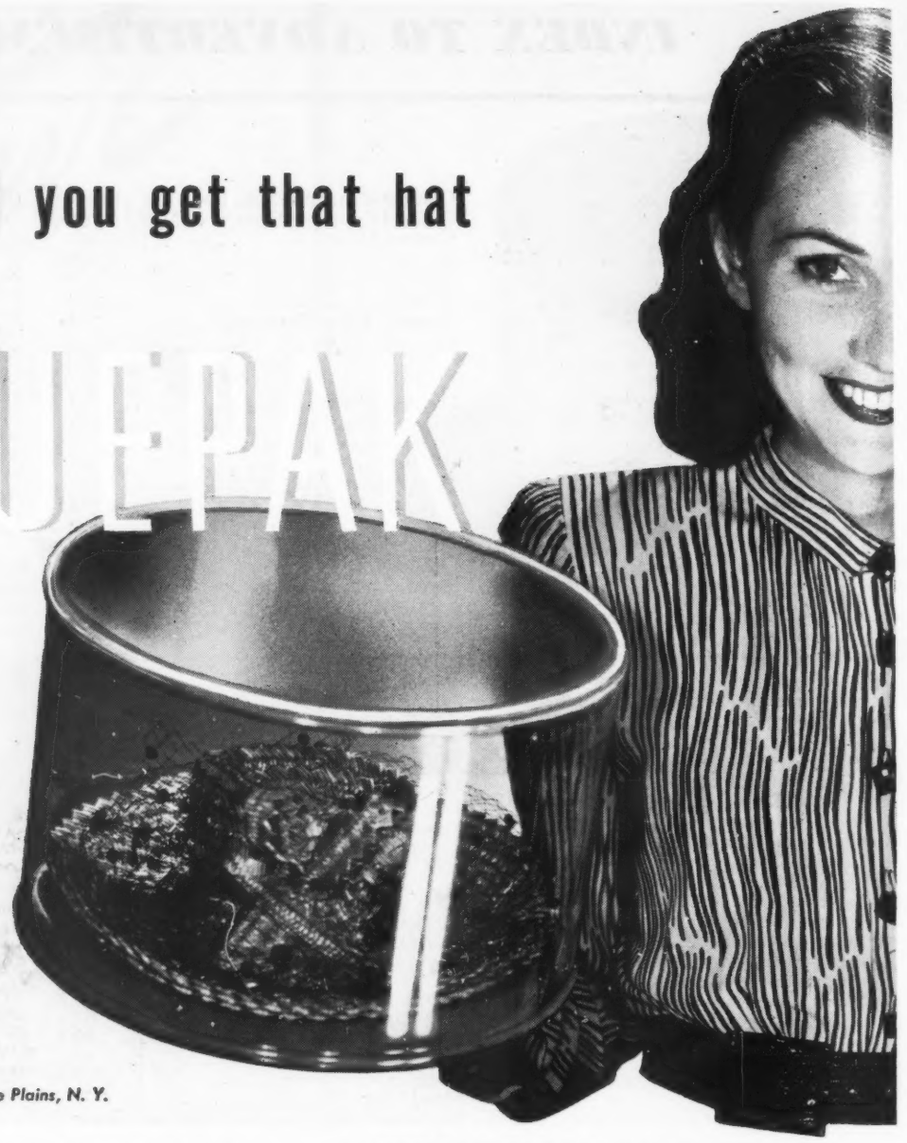
MODERN PACKAGING

Published by Modern Packaging Corp.

122 East 42nd Street New York 17, N. Y.

where did you get that hat

...in VUEPAK



Hat Box of Vuepak, by Plastic Artisans, White Plains, N. Y.

Hats in Vuepak... like harmonicas, hardware, hand-towels, or hundreds of other items... have an irresistible appeal to smart buyers. *Everybody wants to know how and where to get them!*

For Vuepak not only *protects* the merchandise, but it displays it to best advantage. Color, freshness, design and texture are fully revealed, fully exploited in the clear, transparent, rigid "showcase" of Vuepak.

These hat boxes of Vuepak are of particular interest to box-makers and style-wise merchandisers for two reasons:

...the sleek Vuepak lamination of fabric, paper, or glass mat used for the lid.

...the skillful "engineering" of the package so that the bottom and sides can *snap* into place quickly, inexpensively, securely.

Whatever your product may be, if it's worth looking at, it's worth a Vuepak package... and the sales impetus that Vuepak delivers.

Details are available from your box supplier... or direct from: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Massachusetts. In Canada, Monsanto Ltd., Montreal, Toronto, Vancouver.

QUESTIONS AND ANSWERS ON VUEPAK

1. What is Vuepak?
Vuepak is a transparent, tough, rigid, beautiful Monsanto cellulose acetate.

2. In what form is Vuepak available?
In sheets up to 30″ wide, and in continuous rolls 30″ wide up to 1000 ft. long in thicknesses up to .015″. Available in .020″ thickness in rolls with unit finish or in 20″ x 50″ press polished sheets.

3. In what thicknesses is it ordinarily available?
In six standard gauges 0.005″ to 0.020″.

4. Does sunlight affect it?
No.

5. Is it affected by heat?
Not under ordinary temperatures. It begins to soften after 200° F. Underwriters' Laboratories classification, "slow burning."

6. How can it be fabricated?
It can be drawn, shaped, formed or folded into almost any shape with inexpensive dies. It can be embossed, stapled, printed, cemented, or combined with other materials.

VUEPAK: Reg. U. S. Pat. Off.

MONSANTO PLASTICS
SERVING INDUSTRY · WHICH SERVES MANKIND

VUEPAK
TRANSPARENT PACKAGING MATERIAL

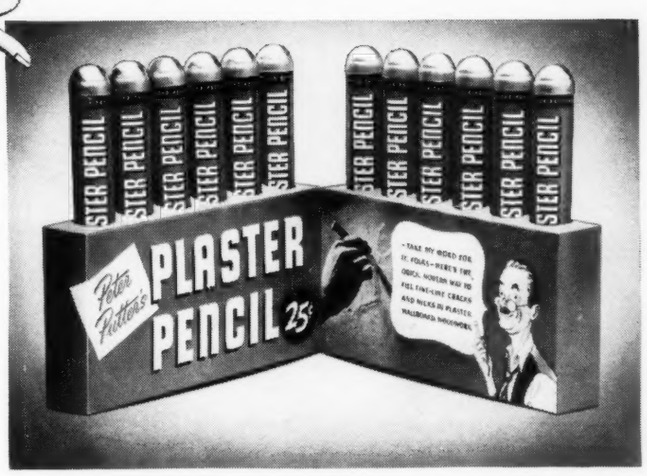
"What am I doing in MODERN PACKAGING!"

Exclaimed Peter Putter

"My regular job is handing out advice to home-owners and housewives in the Saturday Evening Post, Better Homes and Gardens and other consumer magazines — and I feel a little embarrassed talking to you packaging experts!

"But my boss, Schalk Chemical Co. knows plenty about packages. Just the other day he was saying to me, 'Pete, for 25 years Michigan Cartons have been doing a bang-up job of selling and protecting our line — in fact, a measure of our sales success belongs to those packages.'

"He said a lot more, but mostly it boiled down to this — in the long run a sound product plus a reliable packaging source makes a hard combination to beat."



This clever new Schalk display arrives at the dealers pre-assembled. Dealer simply discards sleeve cover and sets display on counter.

Poster-bold simplicity keynotes all Schalk package designs. These cartons give you, at a glance, the product name, application and price. Back panels tell how and where to use product.

Michigan CARTON CO.
BATTLE CREEK, MICHIGAN

. . . and millions did!

Widely acclaimed as an outstanding wartime advertising campaign, these Wrigley car cards and posters were seen and remembered by millions. The Wm. Wrigley, Jr. Company remembered too . . . and when materials were again available returned to Shellmar for this outstanding printed cellophane wrapper. Another example of Shellmar leadership in producing the finest packages for America's finest products.

A good thing to remember, always . . . you get the right answer to packaging problems QUICK . . . from SHELLMAR.

SHELLMAR
PRODUCTS CORPORATION
MOUNT VERNON, OHIO • SOUTHGATE, CAL.
Sales Offices in New York, Chicago, Los Angeles and other principal cities

PACKAGE MANUFACTURER - PRINTER - LAMINATOR - CONVERTER . . . CELLOPHANE - PLIOFILM - ACETATE - SARAN - VINYLS - FOILS - PAPERS - COATINGS